March 2025

Glen Earrach Pumped Storage Hydro

Environmental Impact Assessment Report

Volume 1: Non-Technical Summary

Glen Earrach Energy Ltd

Glen Earrach AECOM

Quality information

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Abbreviations

Abbreviation	Description
AMP	Access Management Plan
CCRA	Climate Change Risk Assessment
CEMP	Construction Environmental Management Plan
CTMP	Construction Traffic Management Plan
ECU	Energy Consents Unit
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
FLS	Forestry and Land Scotland
GIS	Gas-insulated Switchyard
GWh	Gigawatt hour
HRA	Habitat Regulations Assessment
ICCIA	In-combination Climate Change Impact Assessment
INNS	Invasive Non-native Species
LEMP	Landscape and Ecology Management Plan
MWh	Megawatt hour
PAC	Pre-application Consultation
PMP	Peat Management Plan
PSH	pumped storage hydro
SPP	Species Protection Plans
SSE	Scottish and Southern Electricity Networks
tCO2e	Tonnes of Carbon Dioxide Equivalent
UK	United Kingdom
WMP	Water Management Plan

Definitions

Term	Definition
Alltsigh Track	Operational access into the Proposed Development site via Alltsigh to be used during Operation for maintenance.
Balnain Main Access	Main access into the Proposed Development Site from the A831 at Balnain to be used during Pre-Construction and Enabling, Construction and Operation.
Borrow Pit Search Area	An area where material is removed for building materials to be utilised for the Proposed Development. In the case of the Proposed Development, this is located within the Headpond..
Cable Tunnel	A dry tunnel which will hold the cables required for the operation of the Proposed Development. There are two Cable Tunnels.
Construction Phase	The building and commissioning phase of the Proposed Development
Decommissioning Phase	The end of operational use and the removal and/or making safe of the Proposed Development
Dochfour Weir Upgrade	Proposed upgrades to the existing Dochfour Weir to improve fish passage and mitigate impact of PSH on levels in river Ness, which will be subject to separate planning consent
Embankment	Structure retaining the Headpond waterbody, and in the case of the Proposed Development, there are three Embankments all of which are concrete faced rockfilled dams.: Main Dam, Saddle Dam 1 and Saddle Dam 2.
Gas Insulated Switchyard (GIS)	Contains the gas insulated switchgear, which is a type of electrical equipment that uses a gas, such as sulphur hexafluoride (SF6), to insulate and protect various components of a power system.
Headpond	The Headpond is the upper reservoir with associated Embankments.
Headpond Waterbody	Specifically refers to the body of water contained within the Headpond area (as distinct from the overall Headpond structure).
Headrace Tunnels	Tunnels (low pressure and high pressure) connecting the Headpond to the pump turbines
Lower Control Works (LCW)	Where the Tailrace Tunnels connect to the Tailpond, the structure will sit on the western bank of Loch Ness. The LCW comprises of a level platform with 4 intake-outlet structures beneath and a smolt screen that is separated from the main structure.
Main Access Tunnel	A dry tunnel for access and construction which will also be used in operation of the Proposed Development.
Main Dam	The largest of the three dams, located to the southeast of the Headpond
Operational Phase	The period when the Proposed Development is active and has the potential to generate electricity
Option A/Option B	Two alternative configurations for certain aspects of the Proposed Development (particularly for the UCW, Waterways and cavern locations).
Permanent Access Track	Permanent roads within the Proposed Development site that will be either existing, upgraded existing, or new roads used during both construction and operation. All permanent tracks will remain throughout the life of the Proposed Development.
Permanent Compound	Areas used for operational activities that will remain throughout the life of the Proposed Development. These areas will be used for GIS Switchyard, Tunnel Portals, Ventilation Shaft and the Valve House.
Power Cavern Complex	Underground cavern split into two sections: powerhouse cavern (containing the pump turbines); and transformer cavern (containing the transformers)
Pre-Construction and Enabling Phase	Initial works that enable the construction of the Proposed Development
Pressure Shaft	A vertical shaft connecting the Headrace Low-Pressure and High-Pressure Tunnels
Rochdale Envelope	An approach to the application documentation whereby the maximum parameters of the Proposed Development are included and the likely worst case effects of the Proposed Development are assessed.
Saddle Dam 1	First of the smaller dams, located to the northwest of the Headpond
Saddle Dam 2	Second of the smaller dams, located to the northeast of the Headpond
Secondary Bund	A small earthen or concrete dam downstream of the Main Dam.

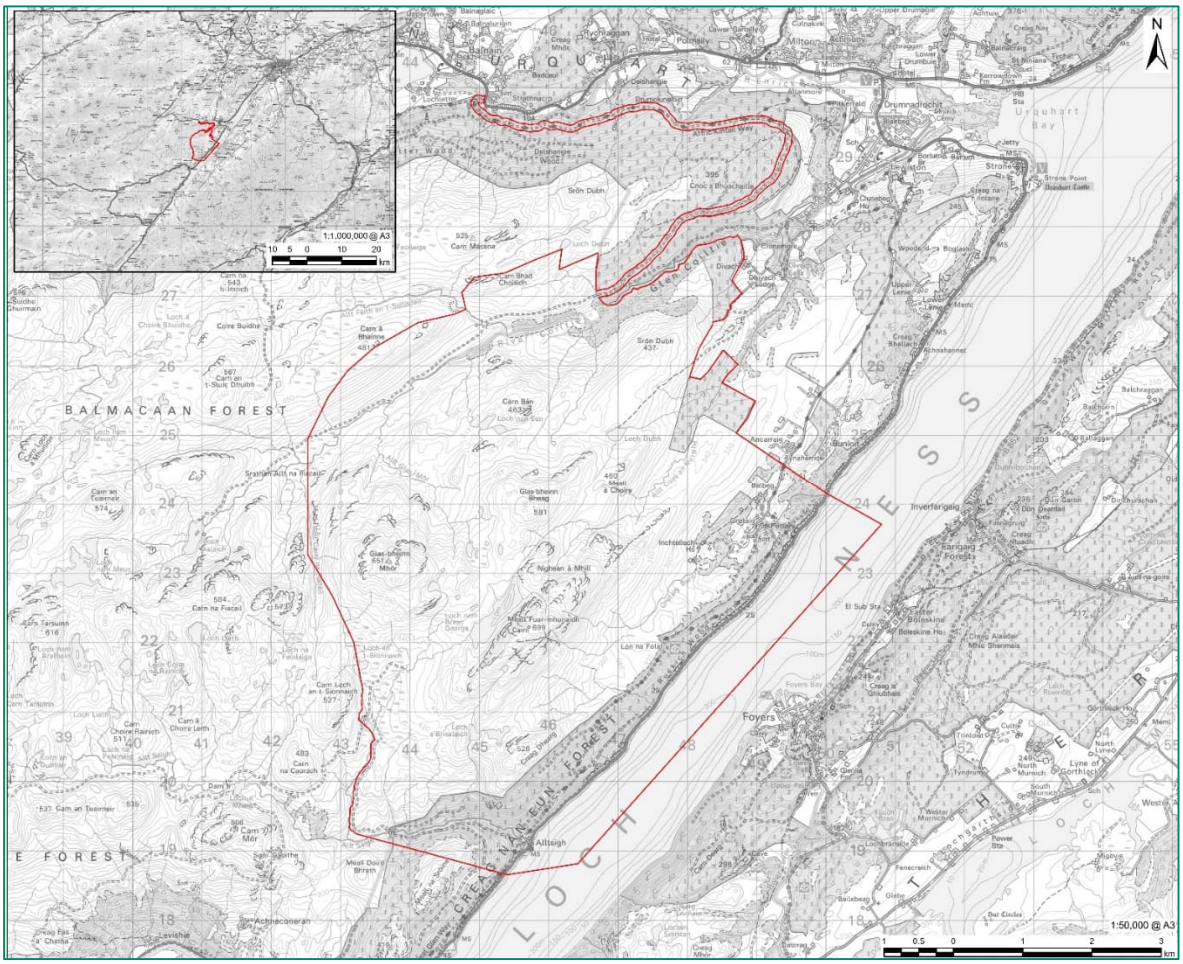
Term	Definition
Smolt Screen	A permanently installed screen with an appropriately sized mesh to prevent smolts (juvenile salmon) from being either drawn into the LCW or from being impinged on the screen due to flow rate
Spillway	Allows the Headpond to spill safely in the event of unusually high water level and will therefore protect the Embankments
Study Area	The geographical area assessed for environmental impacts, varying by chapter
Surge Tanks/Chambers	Underground safety features that accommodate changes in pressure along the Waterways
Tailpond	The Tailpond is the lower reservoir, and in the case of the Proposed Development, this will be the existing body of Loch Ness.
Tailrace Tunnels	The Tailrace Tunnels connects the Power Cavern Complex to the Lower Control Works on Loch Ness
Temporary Access Track	Temporary roads within the Proposed Development Site that will be either existing, upgraded existing, or new roads used only for during of construction. All temporary tracks will be removed and reinstated post-construction.
Temporary Construction Compound	Areas used for construction activities that will be removed and reinstated post construction. These areas will be used for construction related activities such as laydown areas, work yards, welfare facilities, temporary workers accommodation, parking, office space and for general site activities.
Temporary Workers Accommodation	Temporary accommodation and associated welfare and sports facilities to accommodate circa 1,000 workers during the construction phase of the Proposed Development
The Applicant	Glen Earrach Energy Ltd
The Application	The application for consent under Section 36 of the Electricity Act 1989 and deemed planning permission under section 57(2) of the Town and Country Planning (Scotland) Act 1997
the Proposed Development	The Glen Earrach Pumped Storage Hydro project
the Proposed Development Site	Land within the Red Line Boundary in which the Proposed Development would be situated
the Red Line Boundary	Application boundary which contains the Proposed Development Site
Tunnel Portal	Entrance to the dry tunnels (Main Access Tunnel, Cable Tunnels and Valve Cavern Access Tunnel). The entrances to the tunnels would have parking, lighting and security fencing.
Upper Control Works (UCW)	Where the Headrace sections of the Waterways connect to the Headpond. The structure comprises an inlet channel which houses the water intake structures and will predominantly sit within a trench between Saddle Dams 1 & 2 under Option B.
Valve Cavern	Underground cavern located between the UCW and pressure shaft. Within the Valve Cavern, there will be mechanical valves used to isolate the Headrace tunnels.
Valve Cavern Access Tunnel	A dry tunnel for access to the Valve Cavern. The tunnel will be used for Construction and Operation of the Valve Cavern component of the Proposed Development
Valve House	A secure Permanent Compound containing a small control building sited over scour and compensation valving at the foot of the Main Dam.
Ventilation Shaft	A shaft from the Power Cavern Complex to surface level
Waterways	Comprises the wet tunnels required for the movement of water throughout the underground element of the Proposed Development. There are two parallel and separate waterways which convey water through the Proposed Development. Each Waterway comprises a headrace, pressure shaft and tailrace.

1 Introduction

1.1 Overview

1.1.1 Glen Earrach Energy (hereafter referred to as 'the Applicant') is proposing to build a pumped storage hydro (PSH) project to store and generate electricity. Glen Earrach PSH (hereafter referred to as 'the Proposed Development') is located near Loch Ness, centred on national grid reference NH 45255 22395, about 9.5 km south of Drumnadrochit and 6.5 km north of Invermoriston. The main above ground feature of the project, called the Headpond, will be located at the existing Loch nam Breac Dearga, which is about 485 meters above sea level. **Figure 1: Site Location Plan** shows the location of the Proposed Development ('the Proposed Development Site'), together with the planning 'Red Line Boundary'.

Figure 1 Site Location Plan



1.2 Purpose of this Document

1.2.1 As the Proposed Development will generate more than 50 megawatts (MW) of electricity, consent to construct and operate will be required from the Scottish Ministers under Section 36 of the Electricity Act 1989 ('the Electricity Act'). The Applicant has carried out an Environmental Impact Assessment (EIA) and prepared an application to the Scottish Ministers under Section 36 ('the Section 36 Application') and submitted it to the Energy Consents Unit (ECU). The Scottish Ministers will then be asked to grant deemed planning permission under the Town and Country Planning (Scotland) Act 1997.

1.2.2 An Environmental Impact Assessment Report (EIAR) has been prepared and submitted as part of this Section 36 application to provide an assessment of the effects of the Proposed Development on the environment. The purpose of this Non-technical Summary is to provide a summary of the EIAR in non-technical language. The main volumes comprising the EIAR, available separately as part of the Section 36 Application, are as follows:

- **Volume 1:** Non-technical Summary (this document)
- **Volume 2:** EIAR Main Report
  - Chapter 1: Introduction
  - Chapter 2: Project and Site Description
  - Chapter 3: Evolution of Design and Alternatives
  - Chapter 4: Approach to EIA
  - Chapter 5: Planning Policy
  - Chapter 6: Landscape and Visual
  - Chapter 7: Terrestrial Ecology
  - Chapter 8: Ornithology
  - Chapter 9: Aquatic & Marine Ecology
  - Chapter 10: Water Environment
  - Chapter 11: Flood Risk & Water Resources
  - Chapter 12: Cultural Heritage
  - Chapter 13: Access, Traffic & Transport
  - Chapter 14: Noise & Vibration
  - Chapter 15: Geology & Ground Conditions
  - Chapter 16: Socio-Economics, Tourism and Recreation
  - Chapter 17: Climate
  - Chapter 18: Forestry
  - Chapter 19: Summary of Effects
- **Volume 3:** Figures - Contains the figures relating to the EIAR chapters.
- **Volume 4:** Visualisations – Contains photomontages, projecting how the Proposed Development will sit within the surrounding landscape.
- **Volume 5**: Appendices – contains supporting Appendices to the EIAR. The Appendices include detailed technical information such as raw data, survey reports and plans that are cross referenced where relevant within Volume 2 of the EIAR.
- **Volume 6:** Confidential Appendices – contains supporting appendices which are only provided to certain competent bodies due to the nature of the information which is contained within them.

1.2.3 This Non-technical Summary focuses on discussion of residual effects. These are defined as those effects of a development that remain following the implementation of mitigation measures. They have been described during Pre-Construction and Enabling, Construction and Operation of the Proposed Development. Where likely

significant effects have not been identified, it can be concluded that residual effects have not been identified, and therefore no additional mitigation is required.

1.2.4 This Non-technical Summary is structured as follows:

- Section 1: Introduction
- Section 2: Project and Site Description
- Section 3: Timeline
- Section 4: Evolution of Design & Alternatives
- Section 5: Approach to EIA
- Section 6: Consultation
- Section 7: Assessment Findings
- Section 8: Cumulative Effects
- Section 9: Overall Conclusions
- Section 10: Next Steps

1.3 Legislation and Planning Policy Context

1.3.1 The EIAR and this Non-technical Summary have been prepared following all relevant planning policy and legislation. Details of these policies are discussed in the main EIAR **(Volume 2: EIA Main Report)** and in greater detail within the Planning Statement also submitted with the Section 36 Application.

1.3.2 **Chapter 5: Planning Policy** outlines the legislative framework and policies related to climate change and energy that are relevant to the Proposed Development and identifies how they have been considered throughout the preparation of the EIAR. A detailed assessment of how the Proposed Development complies with these policies is included in the accompanying Planning Statement.

1.3.3 Both UK and Scottish Government legislation and policy reflect a long-standing commitment to renewable energy and reducing greenhouse gas emissions to combat climate change. This commitment has grown stronger due to increasing evidence of the severity of climate change and its impact globally.

1.3.4 National policies now provide more support for renewable energy projects, especially storage projects like the Proposed Development, which contribute to the capacity and resilience of the renewable energy system. The National Planning Framework (NPF4) emphasises the urgency of addressing the climate emergency and nature crises, requiring decision-makers to prioritise these issues in all planning decisions. The Highland-wide Local Development Plan (HwLDP) also offers strong support for renewable energy projects, including PSH.

1.4 The Applicant

1.4.1 The Applicant, Glen Earrach Energy Ltd., is a 100% owned subsidiary of Balmac Forest Limited (Balmacaan Estate), which acquired the Balmacaan Estate in 1994. Further details on Glen Earrach Energy Ltd. are provided at: www.glenearrach.energy/.

1.5 The Application

How to View the Documents

1.5.1 This Non-technical Summary, other volumes of the EIAR, and other documentation prepared to support the Section 36 Application, including the Planning Statement, are available to download from The Highland Council ePlanning website wam.highland.gov.uk/wam/ and the ECU website www.energyconsents.scot/.

1.5.2 The EIAR will be available for viewing at the following locations:

- The Highland Council, Glenurquhart Rd, Inverness IV3 5NX;
- Wildside Centre, Foyers, IV2 6UN;

- Glenmoriston Millenium Hall, Invermoriston, Inverness, IV63 7YA; and
- Balnain Hall, Balnain, Drumnadrochit, IV63 6UG.

How to Make Representations

1.5.3 Any representations regarding the application should be made as per guidance on the Scottish Government, Energy Consents website at: gov.scot/publications/energy-consents-how-to-support-or-object-to-an-application/, which advises that representations can be made by email to The Scottish Government, Energy Consents Unit mailbox at representations@gov.scot, or by post to: Energy Consents Unit, Energy Division, Scottish Government, 4th Floor, 5 Atlantic Quay, 150 Broomielaw, Glasgow, G2 8LU.

1.5.4 Representations should identify the proposal, specify the grounds for representation, be dated and should clearly state the name (in block capitals) and full return email or postal address of those making representation. All representations to the Scottish Government will be copied in full to the planning authority, and made available to the public on request, unless individuals request otherwise.

How to Get a Copy of the Application Documents

1.5.5 Electronic copies of the application documents (with the exception of **Volume 6: Confidential Appendices**) will be available on the ECU website and The Highland Council ePlanning website; however, they can also be made available at a fee of £10 per USB pen drive. A paper copy of the Non-technical Summary can be made available at a fee of £10 per copy. Cheques should be made payable to AECOM Ltd., with your name and address on the back.

1.5.6 To request copies of the EIAR documents please contact the Glen Earrach EIA Project Team at the following address: Glen Earrach EIA Project Team, AECOM, 1 Tanfield, Edinburgh, EH3 5DA or via email info@glenearrach.energy.

1.5.7 Information on the Proposed Development will also be available on the Glen Earrach website: www.glenearrach.energy and requests for copies of the EIAR may be submitted through the Contact page.

1.6 Background to the Development

1.6.1 The Applicant has assessed the suitability of the Proposed Development Site by looking at engineering, grid, economic and geological factors. The Applicant considers that the Proposed Development Site is a key location for PSH in Europe, because of its location in relation to the energy grid, and its topography, hydrology and geology allowing for the efficient storing and generating of energy.

1.6.2 The Proposed Development will have a storage capacity of approximately 34,000 megawatt hours (MWh) subject to final configuration of the Headpond, with approximately 2,000 megawatts (MW) of installed electrical pumping capacity and 1,800 MW of installed electrical generating capacity, both subject to final turbine selection.

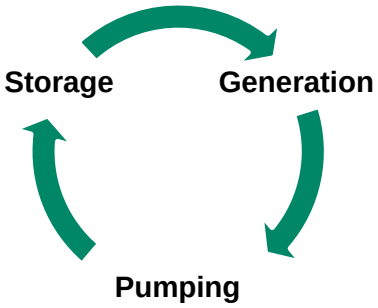
1.6.3 The Proposed Development would be a key part of the UK and Scottish Government's efforts to reach Net Zero emissions[1], and ensure a reliable supply of electricity across the transmission system.

1.7 Concept of Pumped Storage Hydro

1.7.1 Image 1 sets out the three key stages of the operation of PSH which are then further described below.

[1] Compared to greenhouse gas emission levels in 1990.

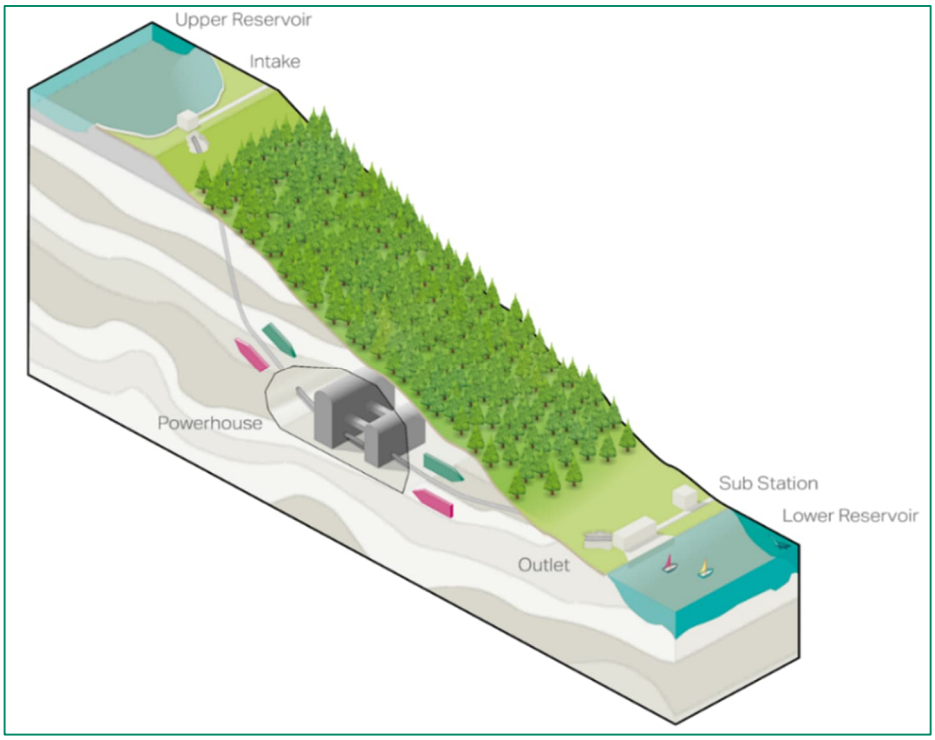
Image 1 Three Key Stages of Pumped Storage Hydro



- **Pumping:** When there's low demand or too much electricity being generated (from wind or solar for example), water is pumped from the lower reservoir (Tailpond) to the upper reservoir (Headpond) through the powerhouse.
- **Storage:** Water (as potential energy) is then stored in the upper reservoir for later use.
- **Generation:** When there's a high demand for electricity, water is released from an upper reservoir to a lower reservoir. As the water flows down, it passes through turbines in the powerhouse, generating electricity.

1.7.2 PSH is very efficient for storing large amounts of energy and can quickly switch between generating and storing energy. PSH works well with renewable energy sources like wind and solar. It helps store excess energy when there's too much and provides energy when there's not enough, making the grid more flexible and reliable. Image 2 below provides an idea of how a PSH works[2].

Image 2 Schematic of a Typical Pumped Storage Hydro Scheme



[2] Note that this is a diagrammatic illustration, and it therefore does not accurately represent the proposed scheme for the Proposed Development.

2 Project and Site Description

2.1 The Site and Surroundings

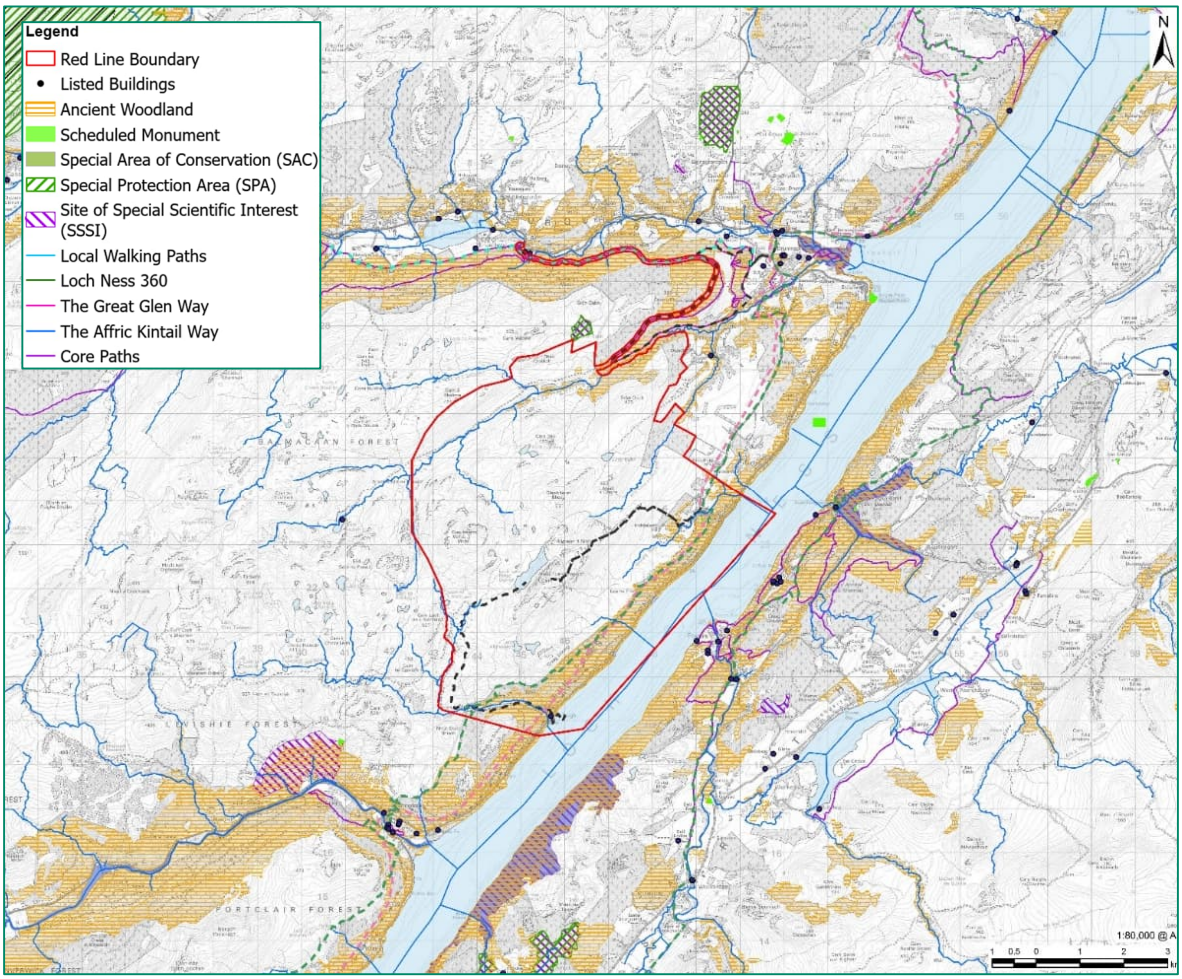
2.1.1 The Proposed Development Site is located in Highland, with main works about 9.5 km to the south of Drumnadrochit and 6.5 km north of Invermoriston, as shown in **Figure 1: Site Location Plan**. The area is mostly rocky moorland with rough grazing. The upper reservoir, the Headpond, is at Loch nam Breac Dearga which is about 480 m above sea level with Loch Ness as the Tailpond.

2.1.2 **Figure 2: The Surrounding Environment** shows environmental and recreational constraints within the Proposed Development Site and surrounding area.

2.1.3 There are no woods within the Headpond area, but there are some small, wooded areas along the eastern, southern, and southwestern edges of the Proposed Development Site. These include plantation woods along the eastern boundary near an access track from Grotaig and commercial forestry along the A82 and another access track from Alltsigh.

2.1.4 The Proposed Development is mainly within the catchment of the Allt Saigh watercourse. This watercourse is fed by smaller streams and lochans in the mountains west of Loch Ness and flows into Loch Ness at Alltsigh. Some of the water in the upper part of the catchment is diverted to the Livishie Power Station.

Figure 2 The Surrounding Environment



2.2 The Proposed Development

2.2.1 The individual components of the Proposed Development during the Pre-Construction and Enabling, Construction and Operational phases are described below.

Operation

2.2.2 As set out in **Chapter 1: Introduction**, the Proposed Development is required to carry out three key functions during operation: Pumping, Storage and Generation. To carry out these operational functions, the Proposed Development requires the following key structures:

- **Headpond**: The upper reservoir created between the hills of Meall Fuar-mhonaidh, Nighean a Mhill and Glas-bheinn Mhor. It has three Embankments (the Main Dam, Saddle Dam 1 and Saddle Dam 2) to contain the water.
- **Secondary Bund**: A small dam downstream of the Main Dam to protect the downstream watercourses.
- **Tailpond**: The lower reservoir, which will be Loch Ness.
- **Waterways**: Underground tunnels that transfer water between the Headpond and the Tailpond.
- **Upper Control Works**: Where the Waterways exit into the Headpond.
- **Lower Control Works**: Where the Waterways enter the Tailpond, including a partially submerged inlet/outlet structure in Loch Ness with screens and gates.
- **Underground Caverns**: Contains the main Power Cavern Complex and Valve Cavern with turbines and other equipment for generating electricity and managing operation of the Proposed Development.

2.2.3 Additionally, the Proposed Development needs the following supporting structures:

- **Gas Insulated Switchyard (GIS)**: A secured area for electrical equipment to connect to the national electricity grid.
- **Dry Tunnels**: Tunnels for access to the Power Cavern Complex, construction and power cables.
- **Valve House**: A small building to control water flow and drain the Headpond, if needed.
- **Ventilation Shaft**: Transfers heat from the Power Cavern Complex to the surface.
- **Development Site Access**: Where the site connects to public roads.
- **Access Tracks**: Permanent internal roads across the site, including water crossings.

2.2.4 The Proposed Development will also need the following components, which require separate planning consent and are not part of this Section 36 Application:

- **Grid Connection**: Overhead lines are assumed to be needed to connect the Proposed Development to the grid via the new GIS.
- **Dochfour Weir Upgrade**: Upgrades to the Dochfour Weir will be necessary to manage water levels in Loch Ness.

2.2.5 **Figure 3: Above Ground Infrastructure** illustrates the Above Ground Infrastructure, while **Figure 4: Below Ground Infrastructure (Sheet 1 - Option A)** and **Figure 5: Below Ground Infrastructure (Sheet 2 - Option B)** depict the Below Ground Infrastructure.

2.2.6 There are two options for the Waterways: Option A and Option B (as presented in **Figures 4** and **5** respectively). The final choice will depend on further ground investigation works. Option B has been considered the ‘worst-case’ for assessment purposes.

Figure 3 Above Ground Infrastructure

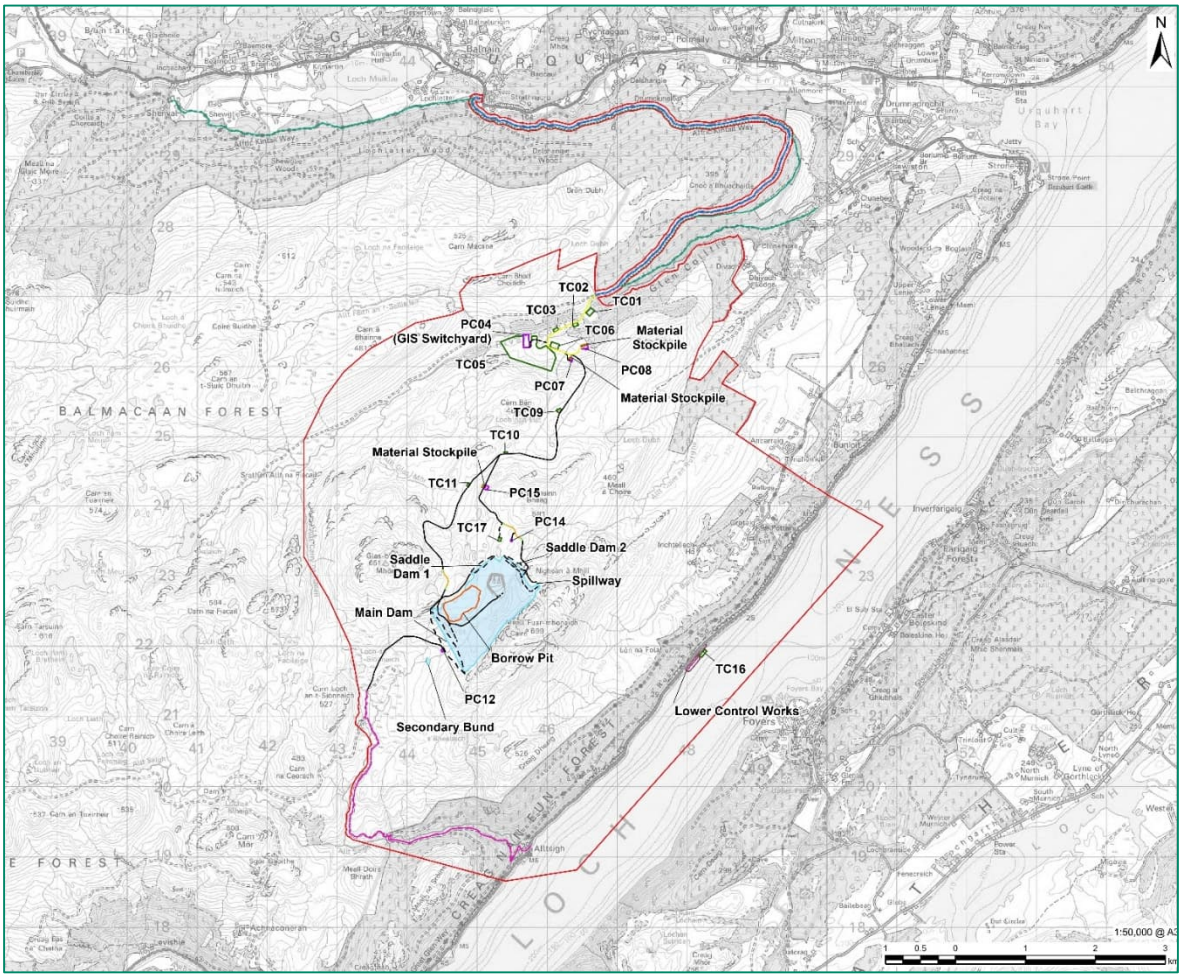


Figure 4 Below Ground Infrastructure (Sheet 1 - Option A)

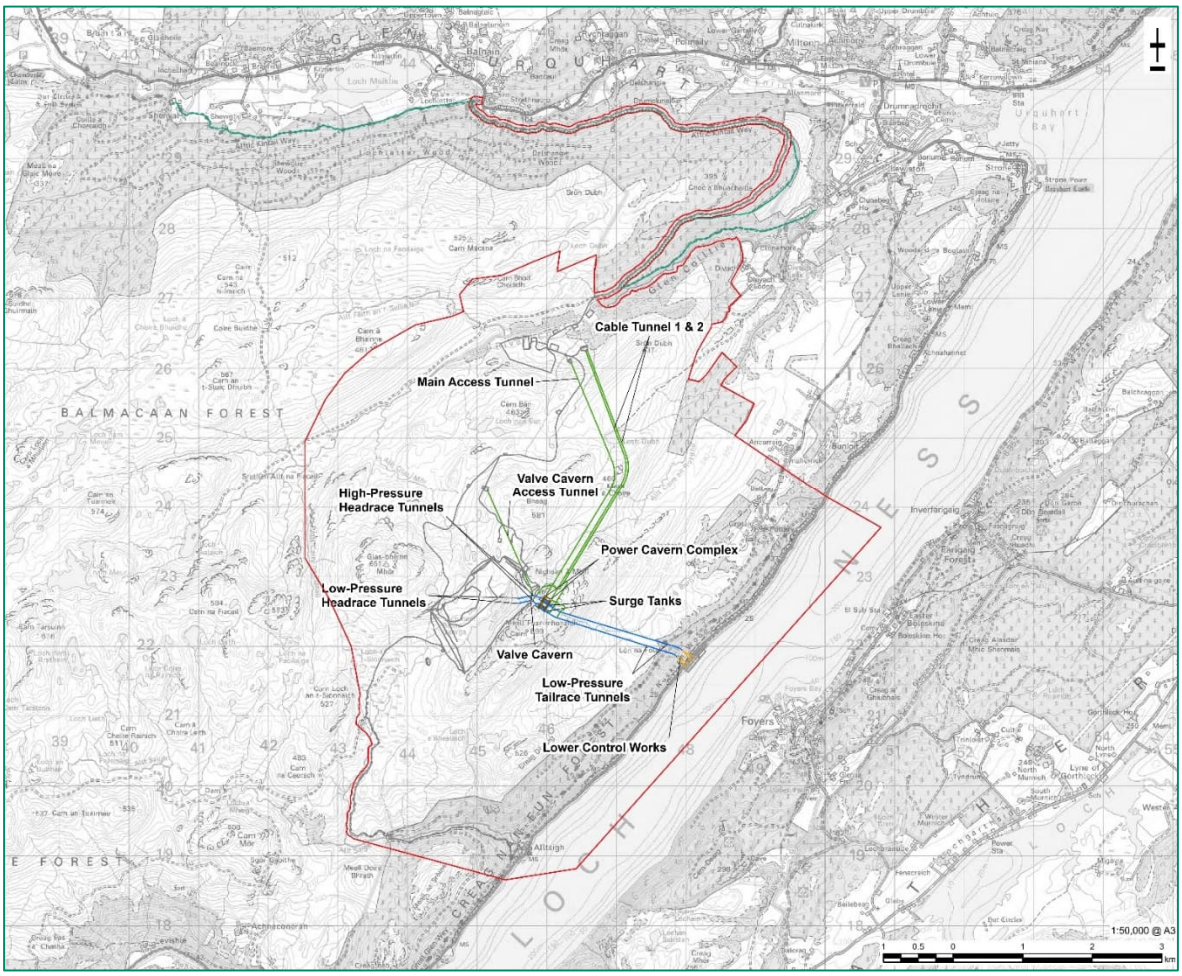
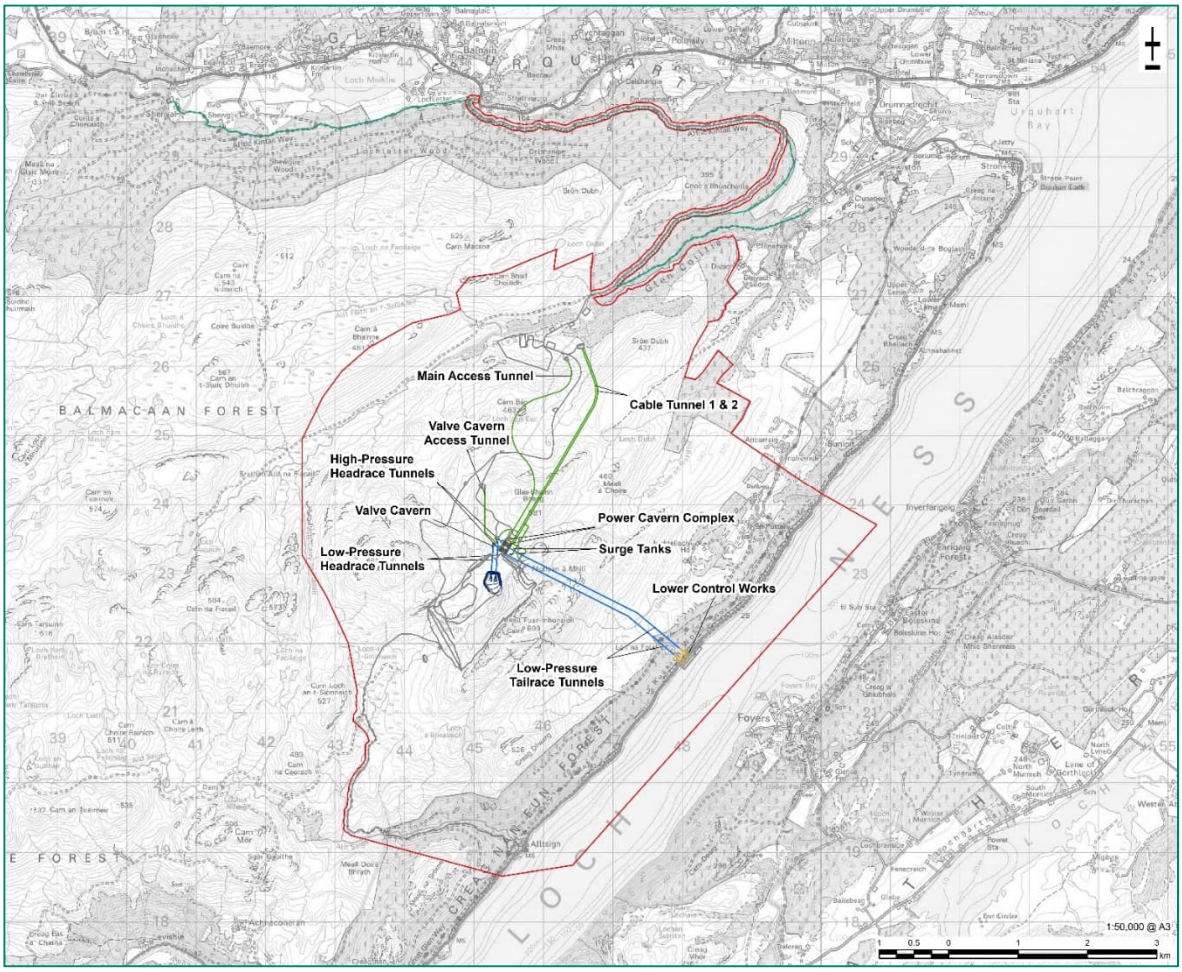


Figure 5 Below Ground Infrastructure (Sheet 2 - Option B)



Construction

2.2.7 The following structures will be needed temporarily during the construction of the Proposed Development:

- **Construction Compounds**: Eleven temporary compounds will be required for material storage, plant and equipment storage, site offices, workers' accommodation and welfare facilities.
- **Borrow Pits**: Areas used to acquire material for the construction of the Proposed Development to minimise importing material to the site. These would be located within the area that will become the Headpond, although re-opening an existing Borrow Pit along the existing Forestry and Land Scotland (FLS) access may also be required.
- **Temporary Access Tracks**: The temporary access tracks would be within the Headpond area to allow for construction.

3 Timeline

3.1 Project Lifespan

3.1.1 The lifespan of the Proposed Development includes the following four phases:

1. **Pre-construction and Enabling**: Initial works which enable the construction of the Proposed Development.
2. **Construction**: The building and commissioning of the Proposed Development.
3. **Operation**: The period when the Proposed Development is active and has the potential to generate electricity.
4. **Decommissioning**: The end of operational use and the removal and/ or making safe of the Proposed Development.

3.2 Construction and Operation

3.2.1 The Construction Phase, including commissioning, will take about 8 years including the Pre-Construction and Enabling Phase carried out in the first two years. Construction activity will peak within years 2 to 4, focusing on tunnelling and construction of the Headpond. Commissioning will be years 5 to 8. Tunnelling and below-ground works will be a 24-hour operation, while Headpond construction and above-ground works will typically occur between 08:00 and 18:00.

3.2.2 **Table 3-1 Phasing of Key Works** sets out the key works which will be carried out at each phase of Pre-Construction and Enabling, Construction and Operation.

Table 3-1 Phasing of Key Works

Year	Phase	Key works
1 to 2 (2 years)	Pre-Construction and Enabling	• Site clearance • Compound set up (including Workers Accommodation) • Creation of borrow pits • Sustainable drainage systems • Construction of the permanent and temporary access tracks • Public path diversions • Construction of access tunnel
2 to 8 (5 years)	Construction & Commissioning	• Headpond construction • Tailpond construction • Tunnelling works • Construction of the permanent and temporary access tracks • Public path diversions • GIS construction • Power Cavern Complex construction • Equipment installation • Commissioning
8 to 125[3]	Operation	• Ongoing health, safety and maintenance inspections • Refurbishment of electrical plant every 25 years • Minor repair works

[3] The expected lifetime of a PSH scheme is reported in academic literature to be around 100 years.

3.3 Decommissioning

3.3.1 Hydropower assets are very durable, so it's rare for large-scale hydro projects to be decommissioned. Instead, they are usually refurbished or adapted. However, if decommissioning is necessary, the Proposed Development can be decommissioned as follows:

1. **Drain the Headpond**: Water would be released into Loch Ness at an agreed rate and timescale through the appropriate licensing regime.
2. **Remove Equipment**: The pump turbines and associated mechanical and electrical equipment would be removed.
3. **Block Entrances**: The tunnel and Power Cavern Complex entrances would be blocked off with local material.
4. **Seal Lower and Upper Control Works**: The Lower and Upper Control Works will be sealed and the smolt screen at the Lower Control Works will be removed.
5. **Remove Surface Structures**: All surface structures would be removed after an appropriate ecological assessment. However, the Embankments will remain and some access tracks might remain for Estate use.
6. **Open Scour Valves**: If the Embankments remains, the scour valves would stay open to prevent water build-up behind the decommissioned Embankments.
7. **Remove Security Fences**: Security fences will be removed noting that access through the Headpond structures would be secured.

4 Evolution of Design & Alternatives

4.1 Introduction

4.1.1 This chapter explains the different design options the Applicant considered and how the design evolved to become the Proposed Development described in **Chapter 2: Project and Site Description**.

4.1.2 According to the EIA Regulations, the Applicant must provide:

- A description of the reasonable alternatives they studied (such as different designs, technologies, locations, sizes, and scales) that are relevant to the project.
- The main reasons for choosing the final option, including a comparison of the environmental effects.

4.2 Consideration of Alternatives

Alternative Location

4.2.1 The site characteristics for the development of viable PSH schemes are quite rare, requiring a combination of the following factors:

- A large height difference over a short distance;
- Proximity to at least one waterbody;
- Strong rock for tunnelling;
- Near to the national electricity grid; and
- With existing access to the site.

Alternative Technology

4.2.2 Few energy storage technologies can match PSH for grid-scale energy storage. Alternatives like batteries are too small to provide the necessary long durations required and others, like compressed air, are largely unproven. Some, like open cycle gas, are much more carbon-intensive for grid balancing and fast response services.

4.2.3 PSH balances electricity supply and demand by storing excess energy during low demand periods and releasing it during peak times. This is especially useful in Scotland, where there is huge wind power generating capability, but it is intermittent. PSH supports renewable energy supply by providing grid stability and additional grid support services.

4.3 Design Evolution

4.3.1 The Proposed Development has been designed through a step-by-step process, taking into account engineering alternatives, environmental limits, and improved understanding of the Proposed Development Site. Efforts have been made to include measures in the design to lessen any significant impacts on sensitive areas. Feedback from consultations, stakeholders and the public, along with survey results, have shaped and will continue to shape the final design. This evolution is described below and shown in **Figure 6: Design I: Pre-Feasibility, Figure 7: Design II: Feasibility, Figure 8: Design III: Scoping, Figure 9: Design IV: Post-scoping (Sheet 1 - Above Ground), Figure 10: Design IV: Post-scoping (Sheet 2 - Below Ground)** and **Figure 11: Design V: Post-Pre-application Consultation (November 2024)** which follow.

4.3.2 The evolution of the design of the Proposed Development has been developed through the following five key stages:

Design I: Pre-Feasibility (April 2022)

- Reviewed potential for PSH development at Balmacaan Estate, using Loch Ness as the Tailpond.

- Designed an initial layout with two options for the Headpond: single Embankment and two-Embankments.
- Considered buildability, landscape impact, and operational capacity.

Design II: Feasibility (February 2023)

- Refined the initial design to target a storage capacity of 30 GWh, based on UK Grid's stability requirements in 2022.
- Added a third Embankment to increase water storage.

Design III: Scoping (March 2024)

- Confirmed the feasibility design after further engineering and visual impact reviews.
- Identified three potential access routes: A82 via Grotaig, A82 via Alltsigh, and A831 via Balnain.

Design IV: Post-scoping (September 2024)

- Consolidated construction works to the north, near the River Coiltie, to reduce community impact.
- Adjusted Proposed Development Site area for substation flexibility.
- Confirmed construction access via an upgraded Forestry and Land Scotland (FLS) forestry road.
- Developed two options for below-ground infrastructure due to geological uncertainties.
- Refined Lower Control Works to limit disruption on A82 and added a smolt screen.

Design V: Post-Pre-application Consultation (November 2024)

- Included a temporary diversion of the Affric Kintail Way near the existing FLS access track for safe recreational use during construction.
- Relocated and resized the temporary workers accommodation compound based on amenity requirements, Council recommendations, and public feedback.

4.3.3 Details of pre-application consultation events and feedback are provided in the **Pre-application Consultation (PAC) Report** submitted as part of this Section 36 Application.

Design VI: Design Freeze (January 2025)

- Refined Options A and B from Design IV: Post Scoping, focusing on below-ground works due to geological uncertainties. Above-ground infrastructure is mostly identical, but the Upper Control Works location varies.
- Added Valve Cavern (and supporting infrastructure) for the control and isolation of Waterways.
- Added ventilation shaft from the Power Cavern to the surface for expelling hot air.
- Added three new compounds: Pressure Shaft Construction Compound, Ventilation Shaft Compound, and Lower Control Works Construction Compound.
- Included secondary bund downstream of Main Dam to manage flow from the scour valve.
- Confirmed main access track alignment after rearranging compounds.

4.3.4 The final Design Freeze Design is as per **Figure 12: Design VI: Design Freeze (January 2025) (Above Ground)** and **Figure 13: Design VI: Design Freeze (January 2025) (Below Ground)** shown in **Chapter 3: Evolution of Design and Alternatives**.

Figure 6 Design I: Pre-Feasibility

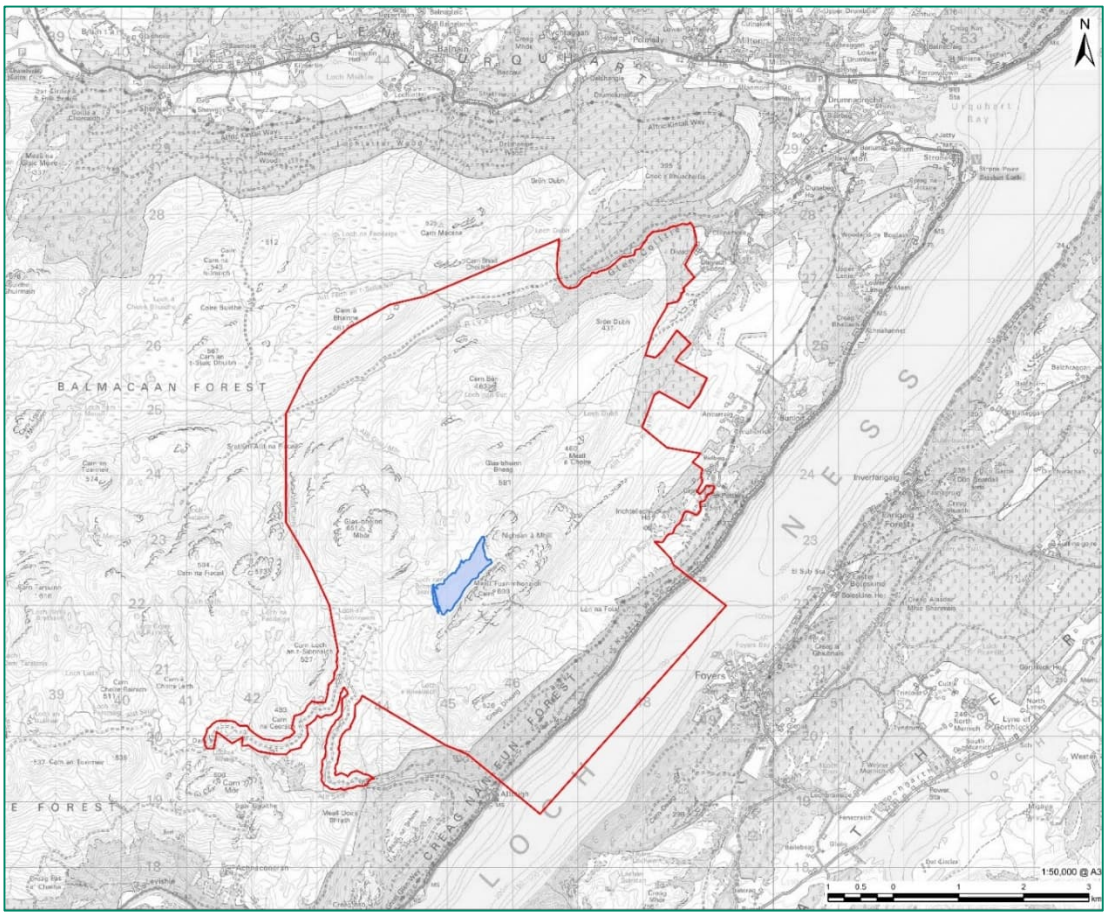


Figure 7 Design II: Feasibility

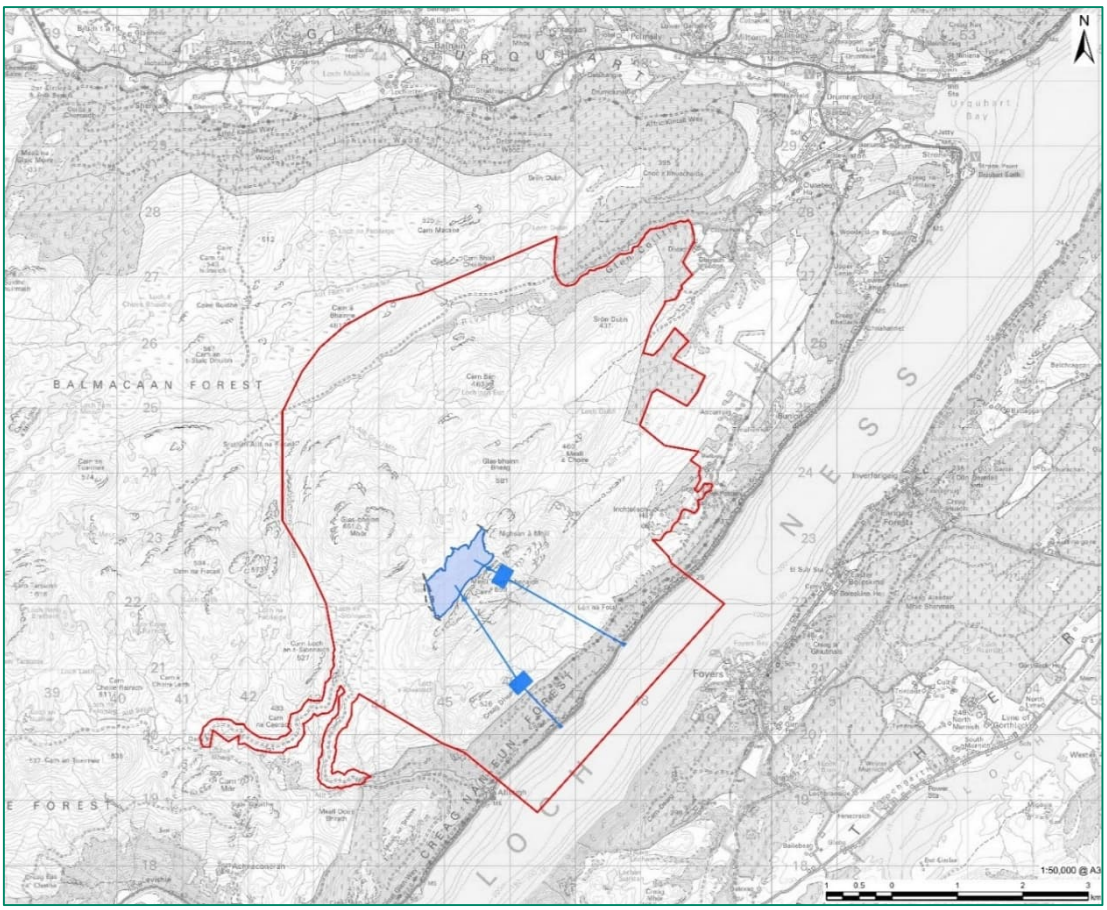


Figure 8 Design III: Scoping

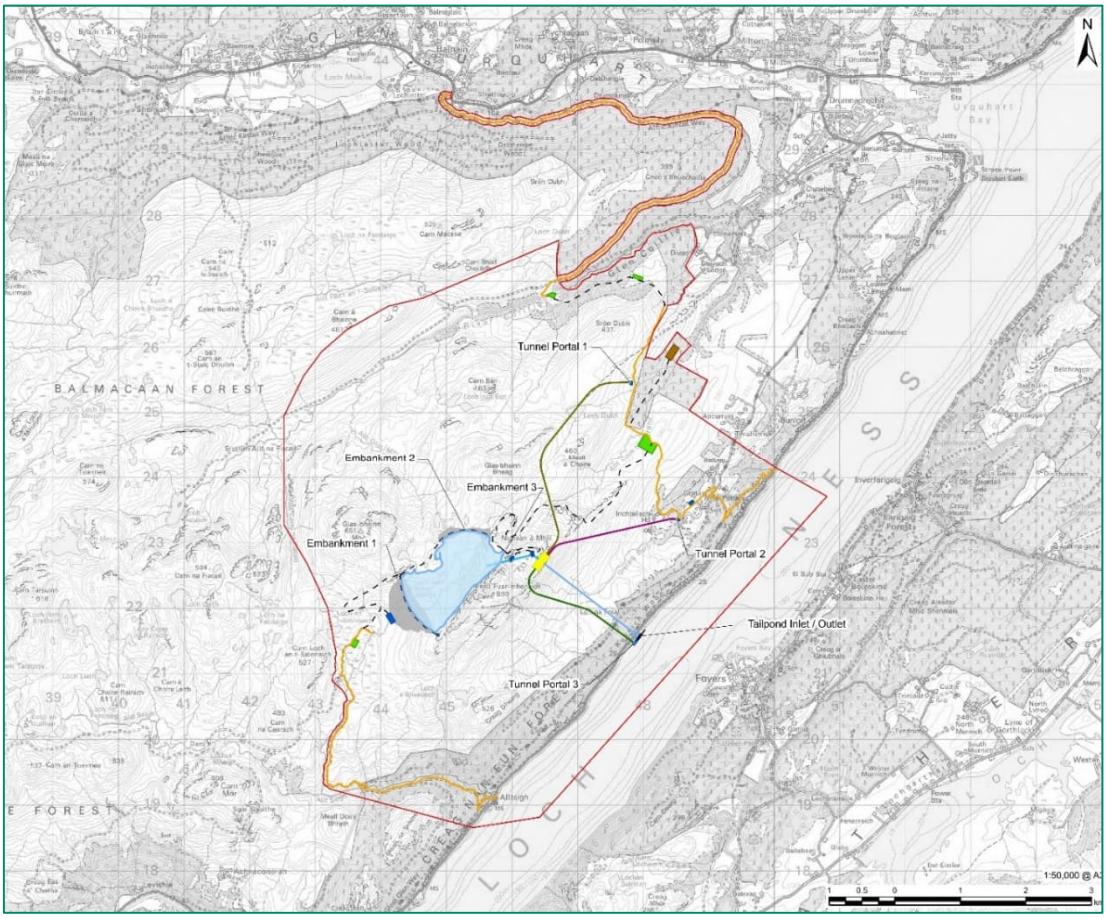


Figure 9 Design IV: Post-scoping (Sheet 1 - Above Ground)

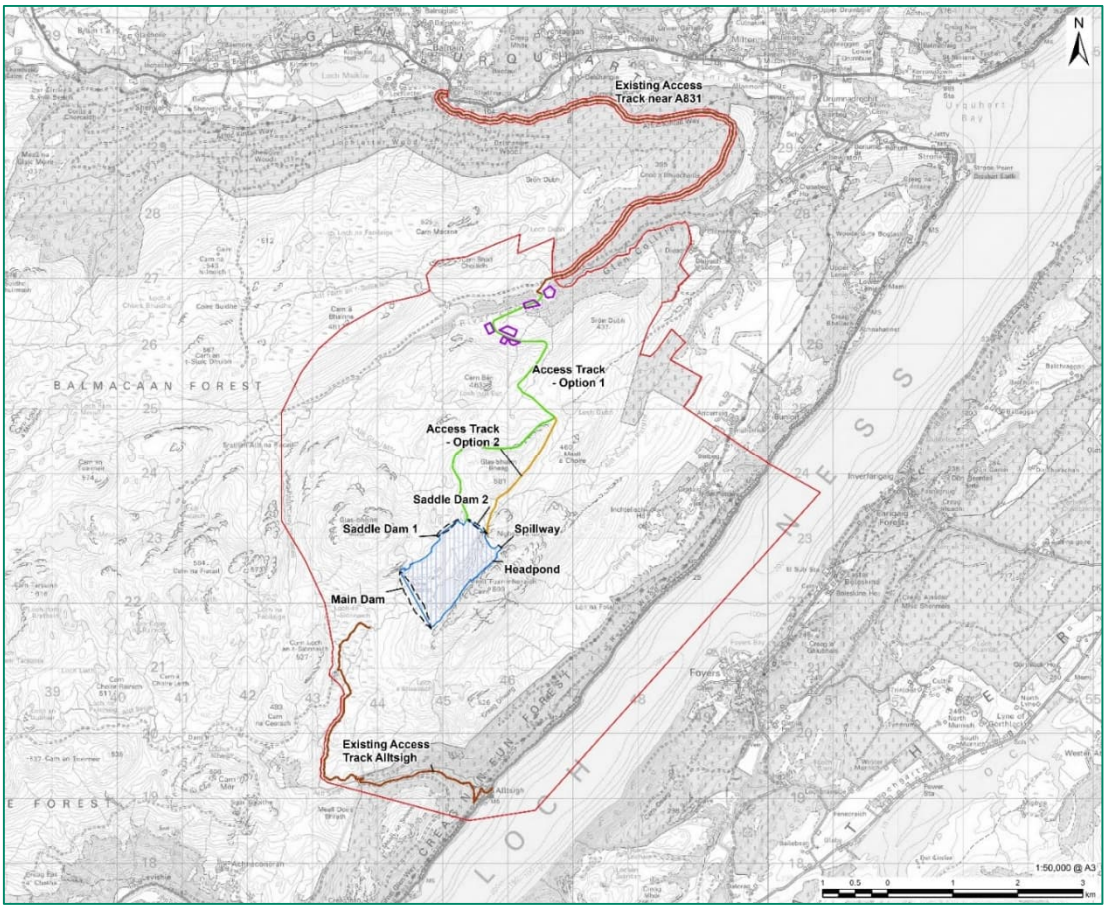


Figure 10 Design IV: Post-scoping (Sheet 2 - Below Ground)

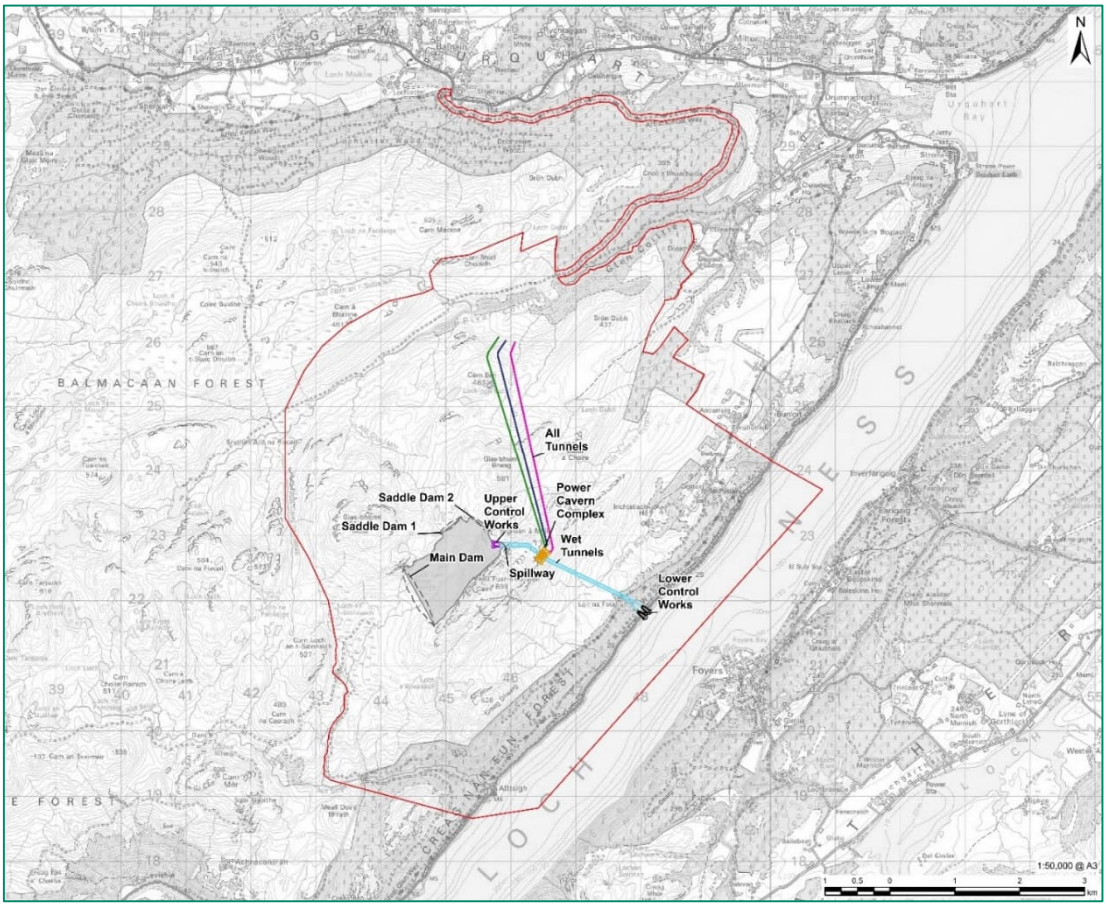


Figure 11 Design V: Post-Pre-application Consultation (November 2024)

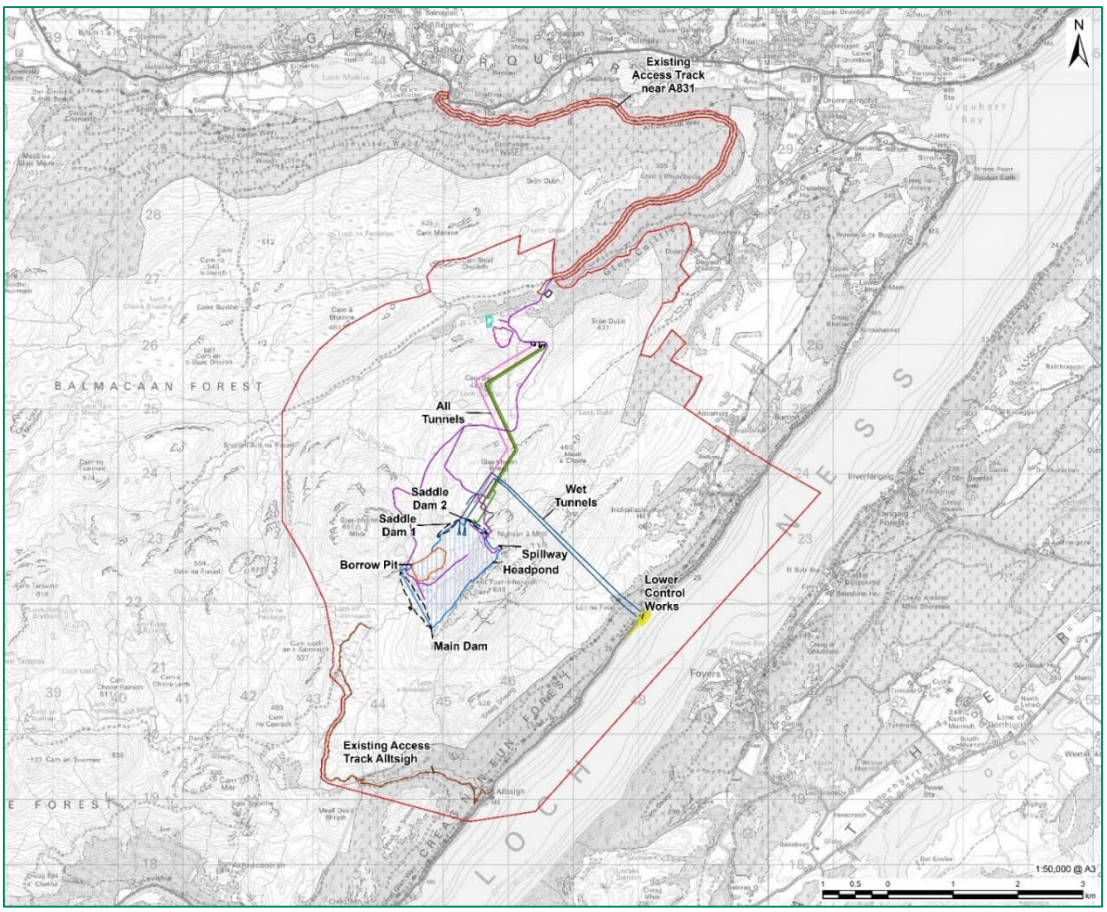


Figure 12 Design VI: Design Freeze (January 2025) (Sheet 1 - Above Ground)

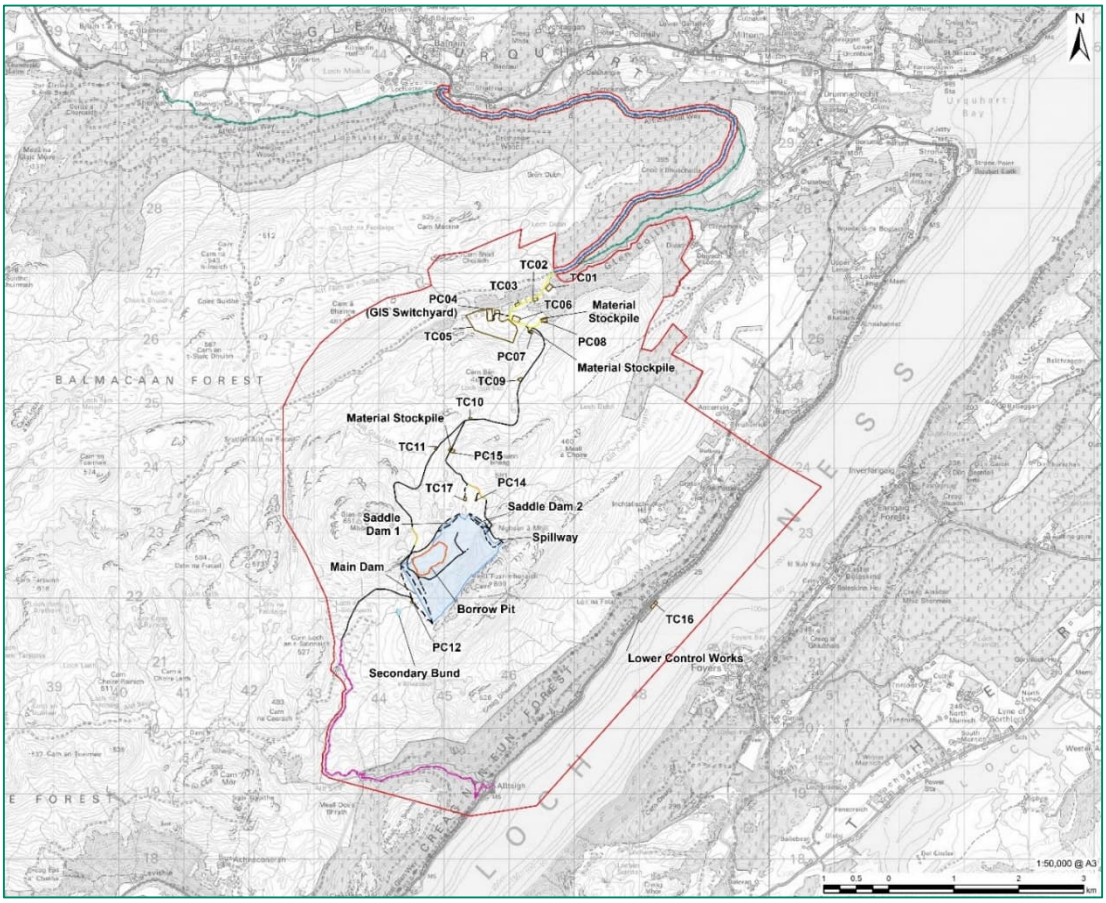
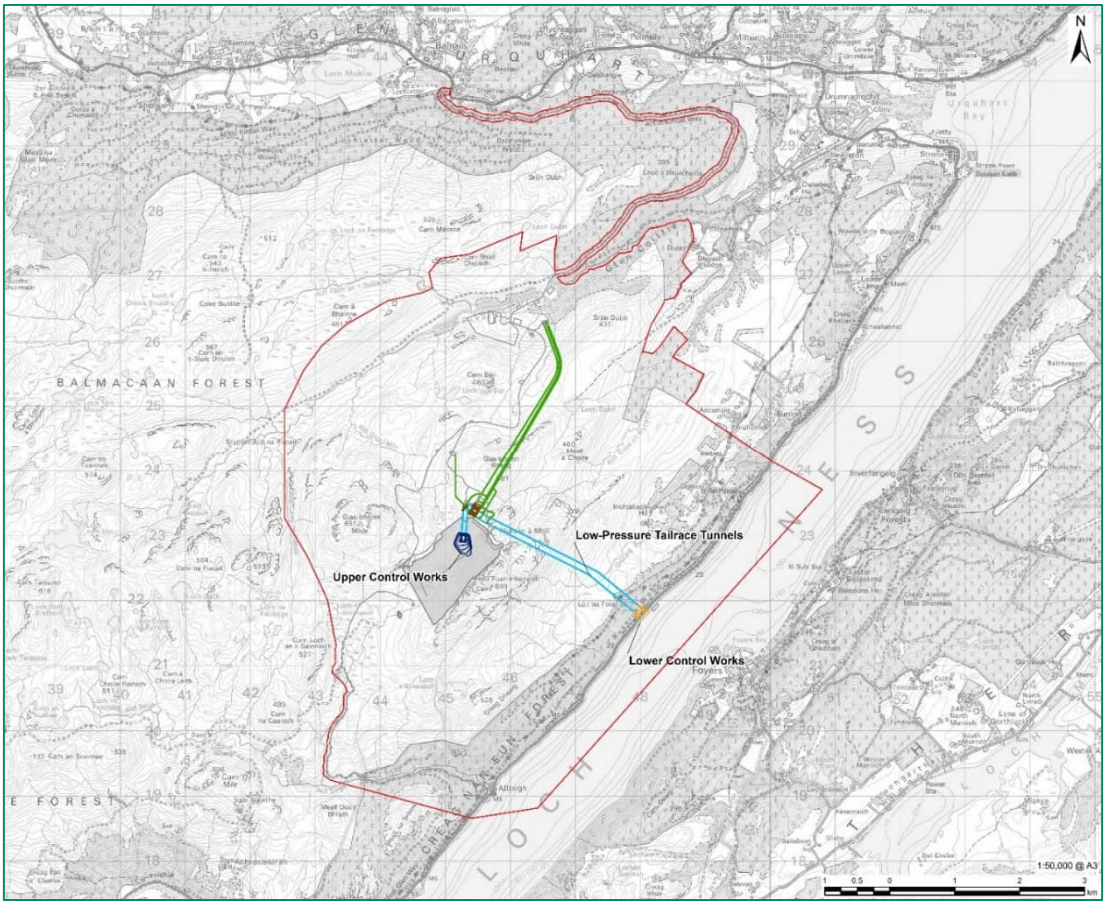


Figure 13 Design VI: Design Freeze (January 2025) (Sheet 2 - Below Ground)



4.4 Detailed Design and Optimisation

4.4.1 The design process resulting in the Proposed Development design has been refined based on considerations during the design development process.

4.4.2 The engineering design for the Section 36 submission follows strict principles and standards, ensuring safety is built into the Proposed Development. For example, the design and construction of the dams will meet the requirements of the Reservoirs (Scotland) Act 2011. The design process uses environmental information gathered throughout the EIA process. Details on how this information is used can be found in the **EIAR Main Report (Volume 2)**.

4.4.3 After getting approval, some parts of the project will need more detailed design work based on further ground investigations, specific operational needs and the Construction Contractor's methods. At this stage, the construction materials and methods will be finalised. There may also be opportunities for further engineering improvements and optimisations, such as a reconfigured or relocated underground Power Cavern Complex.

4.5 Embedded Mitigation

4.5.1 Some safety and environmental measures are built into the design of the Proposed Development. These measures are called embedded mitigation. They include design features and construction practices that follow design and industry good practice guidance.

4.5.2 For the EIA, it is assumed that these embedded mitigation measures are in place from the start. The EIA has assessed the potential significant effects of the Proposed Development, inclusive of these embedded measures.

4.5.3 To confirm, the following mitigation is embedded into the Proposed Development and all outline management plans will develop into fully detailed management plans by the Construction Contractor:

- An Outline Construction Environmental Management Plan (oCEMP) sets out the framework for managing environmental impacts during construction **(Appendix 3.1, Volume 5)**.
- A framework Construction Traffic Management Plan (CTMP) outlines measures to reduce negative effects from construction traffic **(Appendix 13.2, Volume 5)**.
- Topic specific management plans covering the following topics:
  - Outline Landscape and Ecology Management Plan (oLEMP) details landscape and ecological restoration, including planting and management **(Appendix 6.4, Volume 5)**.
  - Outline Peat Management Plan (oPMP) explains how peat will be managed **(Appendix 15.2, Volume 5)**.
  - Outline Water Management Plan (oWMP) describes how water quality will be maintained and how watercourses and private water supplies will be protected **(Appendix 10.4, Volume 5)**.
  - Outline Access Management Plan (oAMP) outlines how recreational and formal access routes and paths will be managed, including any diversions or closures **(Appendix 16.1, Volume** 5**)**.

4.5.4 A full list of embedded mitigation measures is provided in the Mitigation Register in **Appendix 19.1 (Volume 5)**.

5 Approach to EIA

5.1 EIA Process

5.1.1 The EIA is a process used to identify, evaluate, and reduce the significant environmental effects of a proposed development. The EIA for the Proposed Development was carried out alongside the design development process, allowing for the identification and incorporation of mitigation measures as soon as significant effects were found. This ensures that these mitigation measures are embedded into the project design.

5.1.2 The EIA results inform decision-makers, such as Scottish Ministers and planning authorities like The Highland Council, as well as other interested parties, including local communities, about the potential environmental effects of the Proposed Development. These effects are considered before making a decision on the application.

5.2 EIA Scoping

5.2.1 EIA scoping is an initial step in the assessment process that defines the scope and key environmental issues to be addressed. It involves identifying significant impacts, consulting stakeholders, setting baseline data requirements, and developing terms of reference. This ensures the assessment focuses on the most critical concerns, streamlines efforts, and includes relevant input from all parties involved.

5.3 Assessment Methodology

5.3.1 Determining how the Proposed Development affects the environment is a key part of the EIA process. The general approach to the assessment of potential impacts (i.e. alterations/changes induced by the Proposed Development) on an environmental receptor is based on the determination of the significance of the effect from a combination of the sensitivity of the baseline conditions and the magnitude of the impact on the baseline. The impact assessment therefore involves four key steps:

1. Identification of receptors.
2. Assignment of sensitivity (or importance of the receptor).
3. Identification of the magnitude of the potential impact on the receptor.
4. Determination of the significance of the effect on the receptor.

5.3.2 Some assessments, for example Ornithology or Climate, may use an alternative methodology which may be more appropriate.

Identification of Receptors

5.3.3 The Study Area for the Proposed Development will be defined based on specific guidelines, best practice, the potential impact area, and the information needed to assess those impacts. Once the Study Area is defined, baseline information is gathered for each chapter of the EIAR **(Volume 2: EIA Main Report)** through desk reviews, consultations with key stakeholders and field surveys. Understanding the baseline environment is crucial to measure the changes that the Proposed Development would cause.

5.3.4 For each assessment chapter within the EIAR, sensitive receptors are then identified which might be affected by the Proposed Development. These include living organisms, habitats, natural resources, receptors in the historic environment in or around the Proposed Development Site. They may be impacted during Pre-Construction and Enabling, Construction and Operation of the Proposed Development.

Assignment of Sensitivity

5.3.5 The sensitivity of the receptors is based on the importance of the receptor or how likely it is to be affected by the Proposed Development. The criteria for determining sensitivity, importance, or value of these features is based on approved guidance, legislation, statutory designation and/or professional judgment. The criteria in **Table 5-1 Sensitivity** provide a general definition for determining the sensitivity of receptors.

Table 5-1 Sensitivity

Sensitivity	Definition
Very High	The receptor has little or no ability to absorb change without fundamentally altering its present character, is of very high environmental value, or of international importance.
High	The receptor has low ability to absorb change without fundamentally altering its present character, is of high environmental value, or of national importance.
Medium	The receptor has moderate capacity to absorb change without significantly altering its present character, has some environmental value or is of regional importance.
Low	The receptor is tolerant of change without detriment to its character, is low environmental value, or local importance.
Negligible	The receptor is resistant to change and is of little environmental value.

Identification of Magnitude of Impact

5.3.6 The magnitude of impact on the receptor is identified by looking at the Proposed Development and the extent of changes it will cause. The duration of the impact, whether it can be reversed, and relevant laws or guidelines are all considered. **Table 5-2 Magnitude of Impact** gives a general definition for determining the size of a particular impact.

Table 5-2 Magnitude of Impact

Magnitude	Definition
High	Total loss or major alteration to key elements/features of the receptor such that post-development character/composition of baseline condition will be fundamentally changed.
Medium	Loss or alteration to one or more key elements/features of the receptor such that post-development character/composition of the baseline condition will be materially changed.
Low	Minor shift away from baseline conditions. Changes arising from the alteration will be detectable but not material; the underlying character/composition of the baseline condition will be similar to the pre-development situation.
Negligible	Very little change from baseline conditions. Change is barely distinguishable, approximating to a “no change” situation.

Determination of Significance

5.3.7 The general method for assessing significance is set out in **Table 5-3 Significance of Effects** below. The significance of an effect is determined by combining the magnitude of the impact and the sensitivity of the receptor affected.

Table 5-3 Significance of Effects

Magnitude	Sensitivity				
	Very High	High	Medium	Low	Negligible
High	Major	Major	Moderate	Moderate	Minor
Medium	Major	Moderate	Moderate	Minor	Negligible
Low	Moderate	Moderate	Minor	Negligible	Negligible
Negligible	Minor	Minor	Negligible	Negligible	Negligible

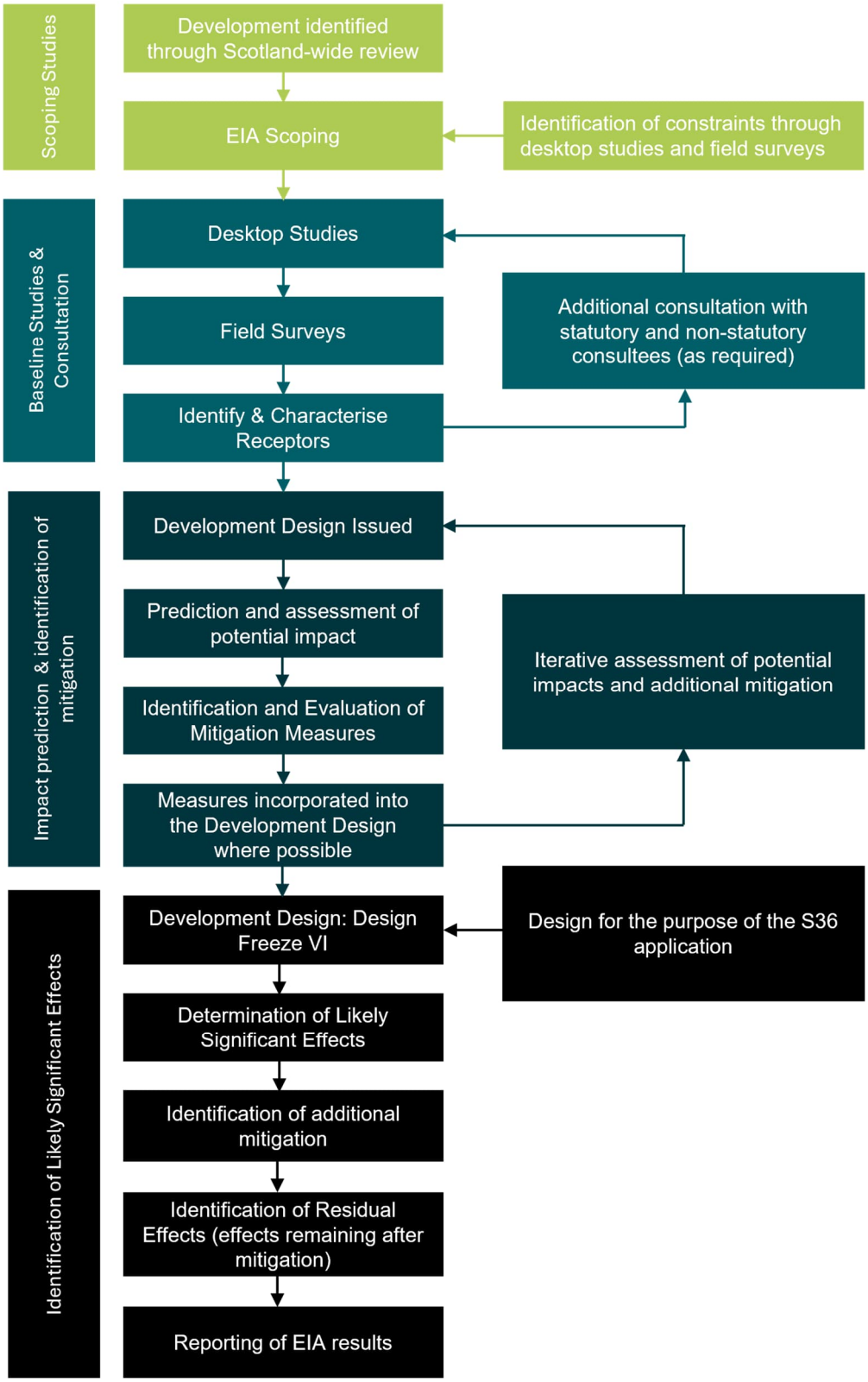
5.3.8 Significant effects are effects which are either moderate or major following the introduction or establishment of mitigation or compensation measures.

5.3.9 A significant negative residual effect doesn't automatically mean the Proposed Development is unacceptable, and a significant positive residual effect doesn't automatically make it acceptable. The goal of identifying significant effects (both negative and positive) is to ensure that everyone, especially decision makers, understand the

environmental impacts of the Proposed Development. This information is considered along with other important factors when deciding on the application.

5.3.10 The EIA process can be summarised within the flow chart included in **Image 3**.

Image 3 The EIA Process



6 Consultation

6.1.1 The Applicant is committed to ongoing engagement with statutory and non-statutory consultees and interested parties throughout the consenting process. The consultation undertaken to date is as follows:

- EIA Scoping (ongoing from April 2024).
- Pre-application Advice (August to October 2024).
- Community Consultation:
  - Early Community Engagement (May 2024);
  - Initial Public Consultation (August and September 2024); and
  - Pre-application Consultation (October and November 2024).
- Additional Ad-hoc Consultation (Ongoing) with statutory and non-statutory consultees.

6.1.2 In addition to the community consultation events, a virtual consultation room was also made available at glenearrach.consultation.ai to provide an opportunity to exhibit to a wider audience.

6.1.3 A summary of all consultation responses received to date and actions taken is provided in the **PAC Report** submitted as part of this Section 36 Application.

7 Assessment Findings

7.1 Introduction

7.1.1 This chapter summarises the potential residual effects on receptors discussed in each chapter of the EIAR. For more details on each assessment including chapter-specific assessment methodology and field surveys carried out, please refer to **Volume 2: EIA Main Report** of the EIAR.

7.2 Landscape and Visual

Overview

7.2.1 This chapter of the EIAR **(Chapter 6: Landscape and Visual)** looks at the potential visual impact of the Proposed Development and the potential impacts on landscape character and visual amenity.

7.2.2 The Highland Council's Landscape Character Assessments uses Landscape Character Types (LCTs) to identify and describe areas with consistent and recognisable landscape characteristics. Chapter 6 considers the impact of the Proposed Development on specific features of these LCTs that are important to the character of the landscape.

7.2.3 In addition, the Proposed Development is located within the Loch Ness and Duntelchaig Special Landscape Area (SLA), designated by The Highland Council as a *"striking, linear landform trench containing Loch Ness"* offering "*a dramatic sequence of landscape elements along its 23-mile length"*.

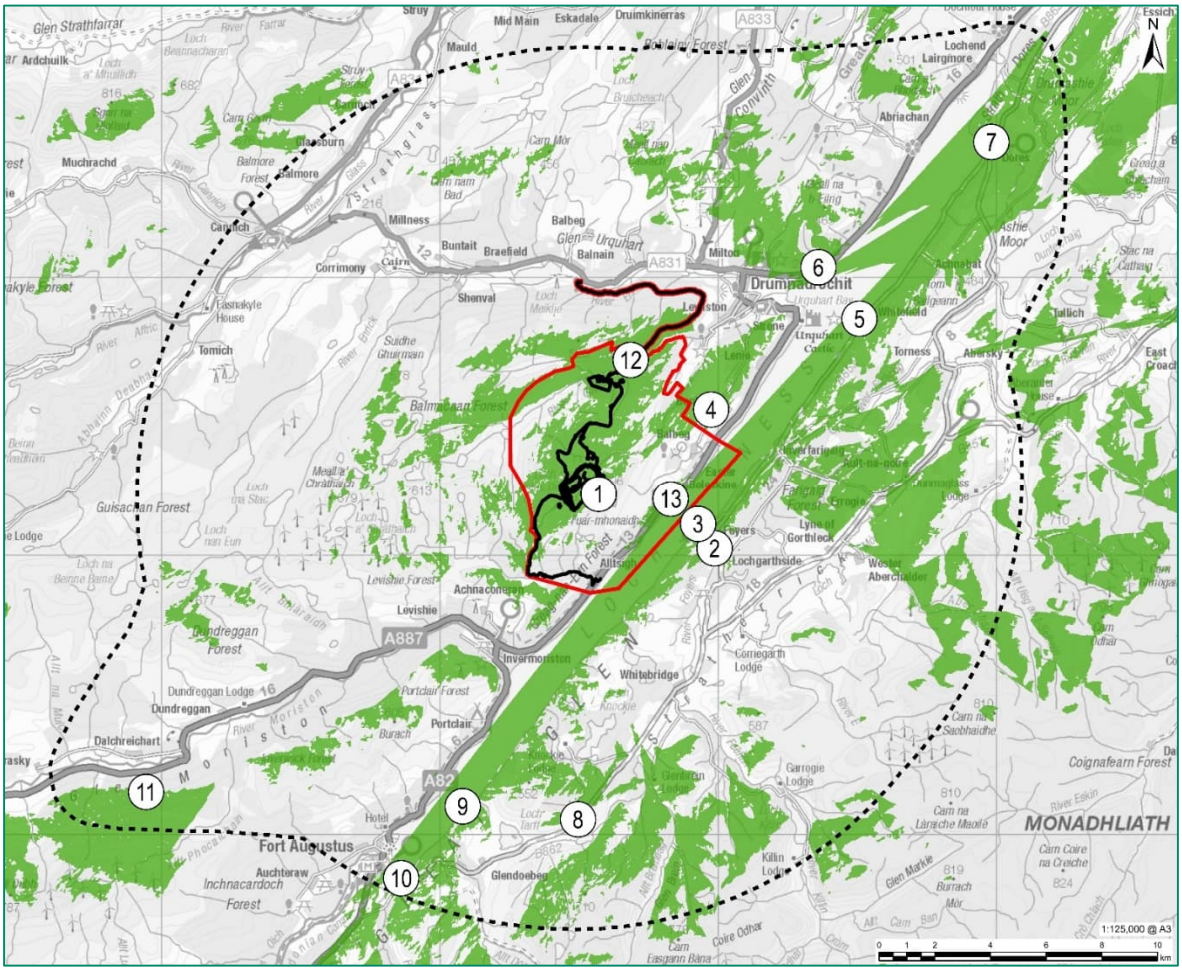
7.2.4 Viewpoints have been selected to represent the experience of different types of visual receptors including residential dwellers, users of transport and recreational routes and other outdoor locations. These representative viewpoints are shown on **Figure 14: Landscape and Visual Viewpoints**.

7.2.5 The Proposed Development is a large infrastructure development project and therefore the siting and visual impact of the Proposed Development has been carefully considered as part of the design evolution as detailed in **Chapter 3: 'Evolution of Design and Alternatives'**.

7.2.6 The majority of the Proposed Development would be located below ground. For the above ground components, the existing topography has been utilised to site the Proposed Development sympathetically to the surrounding landscape character and provide some visual screening. In addition, the topography has been utilised in the design of the Proposed Development to reduce the embankment size and length required to create the Headpond.

7.2.7 Mitigation measures are detailed in the **outline Landscape and Ecological Management Plan (oLEMP) (Appendix 6.4, Volume 5)**. These include landscape and habitat restoration measures developed collaboratively with the ecology, forestry and heritage specialists and provide a cohesive mitigation design response.

Figure 14 Landscape and Visual Viewpoints



Residual Effects

Pre-Construction and Enabling

7.2.8 During the Pre-Construction and Enabling Phase, due to the smaller scale of the works proposed, the Proposed Development would have a negligible to minor, **Not Significant**, adverse effect on the character of the landscape and the Loch Ness and Duntelchaig SLA within which the Proposed Development is partially located.

7.2.9 The following viewpoints would experience **Not Significant** adverse effects during the Pre-Construction and Enabling Phase:

- Bunloit Road near Bunloit (Viewpoint 4)
- Beach near to Loch Ness View off the B852 (Viewpoint 5)
- The Great Glen Way near Urquhart Castle (Viewpoint 6)

7.2.10 The Proposed Development would have a **Significant** adverse effect on users of the core path network and Glen Coiltie Walking Loop (Viewpoint 12) due to its proximity of the pre-construction and enabling works to the path network within the Proposed Development Site.

Construction

7.2.11 During Construction, there would be **Significant** adverse effects on the Loch Ness and Duntelchaig SLA and two of the LCTs within which the Proposed Development would be located. These are LCT 222: Rocky Moorland Plateau - Inverness and LCT 225: Broad Steep-Sided Glen.

7.2.12 The remaining LCTs within the wider area would experience a **Not Significant** effect.

7.2.13 The summit of Meall Fuar-mhonaidh (Viewpoint 1) would experience a **Significant** adverse effect during Construction due to its location adjacent to the Headpond; however, views east from the summit over Loch Ness would be unaffected. The Proposed Development would also have a **Significant** adverse effect on users of the core path network and Glen Coiltie Walking Loop (Viewpoint 12) and the A82 Layby (Viewpoint 13) due to their proximity to the works.

7.2.14 The settlement of Foyers (Viewpoint 2), Foyers Campsite (Viewpoint 3) and the Beach near to Loch Ness View off the B852 (Viewpoint 5) would experience significant adverse effects on their views over Loch Ness toward the Proposed Development Site. Loch Ness canoeists and pleasure craft users (Viewpoint 9) would also experience **Significant** adverse visual effects during Construction.

7.2.15 Other identified viewpoints would experience **Not Significant** adverse visual effects.

Operation

7.2.16 At year 1 of operation, **Significant** adverse landscape effects are predicted at LCT 222: Rocky Moorland Plateau - Inverness. By year 15 this impact would be reduced to **Not Significant** following the establishment of the planting proposed within the **oLEMP (Volume 5, Appendix 6.4)**.

7.2.17 At year 1 of operation there would also be significant adverse effects on the following viewpoints:

- The summit of Meall Fuar-mhonaidh (Viewpoint 1);
- The settlement of Foyers (Viewpoint 2):
- Foyers Campsite (Viewpoint 3); and
- users of the core path network and Glen Coiltie Walking Loop (Viewpoint 12).

7.2.18 By year 15, effects on the settlement of Foyers (Viewpoint 2), Foyers Campsite (Viewpoint 3) and the core path network and Glen Coiltie Walking Loop (Viewpoint 12) would be reduced to **Not Significant** following the establishment of the planting proposed within the **oLEMP (Volume 5, Appendix 6.4)**.

7.2.19 Representative visualisations for the views of the Headpond from Viewpoint 1 (Meall Fuar-mhonaidh) and views of the Lower Control Works from Viewpoint 3 (Foyers Campsite) during operation are shown in **Images 4** and **5**.

Image 4 View of the Headpond from Meall Fuar-mhonaidh

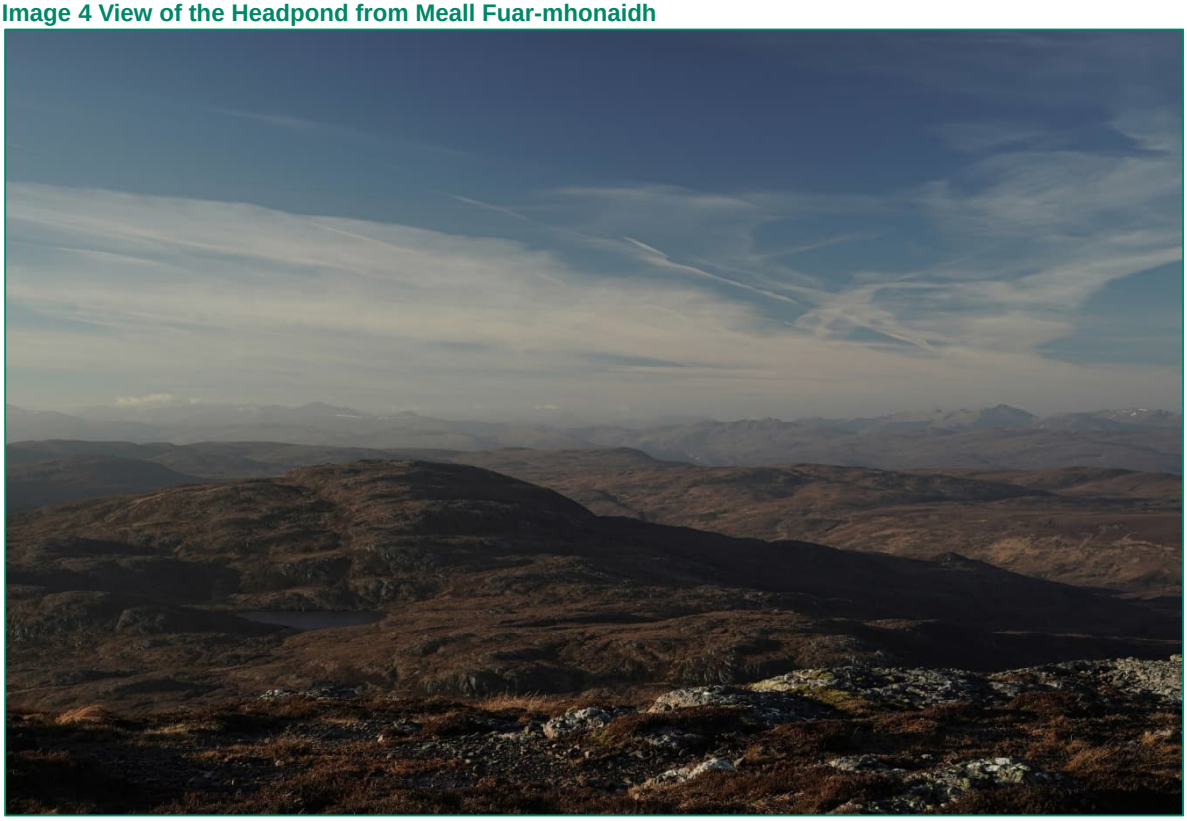


Image 5 View of the Lower Control Works from Foyers Campsite

Decommissioning

7.2.20 The assessment of decommissioning impacts has been scoped out of this assessment.

7.3 Terrestrial Ecology

Overview

7.3.1 This chapter of the EIAR **(Chapter 7: Terrestrial Ecology)** looks at the potential impacts on protected species that live on land and their habitats, including important sites like Special Areas of Conservation (SAC) and Sites of Special Scientific Interest (SSSI) within 10 km, which could be affected by the Proposed Development.

7.3.2 The Ness Woods, Urquhart Bay Wood and Loch Ruthven SACs and Easter Ness Forest, Inverfarigaig and Urquhart Bay SSSIs have the potential to be impacted by the construction and/or operation of the Proposed Development. These sites have been designated for their important terrestrial ecological features.

7.3.3 **Appendix 7.2: Statement to Inform Habitats Regulations Appraisal (Volume 5)** sets out an assessment for adverse effects from the Proposed Development on the important features of European sites which include impacts on SACs. It concludes that the Proposed Development would not result in adverse effects on any European designated sites.

7.3.4 Ecological field surveys were carried out within the Proposed Development Site and surrounding area between April 2024 and October 2024 which identified the following key habitats within the Proposed Development Site: woodland, montane scrub, blanket bog, wet heath, dry and montane heath, grassland, natural cliff/crag, and flush, fen and swamp.

7.3.5 Bats, Otter, Water vole, Pine marten, Adder and Slow worm and terrestrial invertebrates (which include insects, spider, and snails) have been identified on-site and have the potential to be impacted by the Proposed Development.

Residual Effects

Pre-Construction and Enabling

7.3.6 This chapter concludes that potential impacts on designated sites, woodland and heaths during Pre-Construction and Enabling Phase would be negligible and **Not Significant**.

7.3.7 There would be permanent adverse loss of blanket bog and a hydrological impact on the retained blanket bog during the Pre-Construction and Enabling Phase; however, due to the local scale of these impacts, they would result in **Not Significant adverse** effects.

7.3.8 There would be adverse effects on protected species like roosting bats, otters, water voles, pine martens, adders, slow worms, and terrestrial invertebrates due to habitat loss, disturbance, or potential mortalities. However, mitigation measures such as pre-works surveys, works exclusion zones, and Species Protection Plans (SPP) are proposed resulting in an overall **Not Significant** adverse effect on protected species.

Construction

7.3.9 Potential impacts on designated sites during Construction would be negligible and **Not Significant**.

7.3.10 There would be permanent adverse effects due to the loss of ancient woodland, montane scrub, and blanket bog, considered significant adverse due to their regional importance. Following the introduction of compensation measures these effects would be reduced to **Not Significant**. These compensation measures are detailed further in the **oLEMP (Appendix 15.2, Volume 5)** and summarised below:

- Enhancement of 55 hectares of ancient semi-natural birchwood, through protection from deer to encourage regeneration and recruitment which are currently lacking;
- Provision of a deer-protected buffer for ancient semi-natural woodland regeneration;
- Planting of 700 hectares of native woodland and montane scrub;
- Reduction in deer density on retained open moorland;
- Provision of three ponds suitable for emerald dragonflies, a local speciality; and,
- Provision of suitable habitat for water voles to be translocated to from the Headpond.

7.3.11 There would also be permanent adverse effects due to the loss of other semi-natural woodland, heaths, species-rich grassland, natural cliffs/crags, and notable flora, considered **Not Significant** due to their local importance.

7.3.12 The chapter notes a negligible, **Not Significant**, hydrological impact on ancient woodland, other semi-natural woodland, and wet and dry heaths.

7.3.13 There would be negligible, **Not Significant**, effects on protected species like roosting bats, otters, water voles, pine martens, adders, and slow worms due to habitat loss, habitat severance, disturbance, or potential mortalities. Mitigation measures such as pre-works surveys, works exclusion zones, and specific SPP are proposed.

7.3.14 There would be permanent adverse, **Not Significant**, effects on otters, water voles, pine martens, and terrestrial invertebrates due to habitat loss. The potential mortality of water voles would result in a permanent adverse effect during Construction, but mitigation measures such as pre-works surveys, works exclusion zones and reference to specific SPPs, would reduce the impact to temporary **Not Significant** adverse.

7.3.15 The disturbance of otters and pine martens during these works would result in a temporary adverse **Not Significant** effect.

Operation

7.3.16 Measures to mitigate the impact of the Operation of the Proposed Development on protected species have been embedded into the design. These measures include sensitive lighting and water crossing design which take into account the behaviours of Otter and Water vole.

7.3.17 The direct impacts on habitats are considered as part of the Construction phase impacts and therefore are not reassessed here. The chapter therefore concludes that potential impacts on designated sites and other habitats and protected species during operation would be negligible and **Not Significant**.

Decommissioning

7.3.18 The assessment of decommissioning impacts has been scoped out of this assessment.

7.4 Ornithology

Overview

7.4.1 This chapter of the EIAR **(Chapter 8: Ornithology)** assesses the potential impacts on protected bird species and their habitats, including important sites like Special Protection Areas (SPA), SSSI, and Ramsar sites within 10 km, which could be affected by the Proposed Development.

7.4.2 There are four SPAs and one Ramsar site within 10 km of the Proposed Development Site: North Inverness Lochs SPA, Loch Knockie and nearby Lochs SPA, Loch Ruthven SPA and Ramsar site, and Glen Affric to Strathconon SPA. Additionally, there are five SSSIs which were identified with the potential to be connected to the Proposed Development Site: Dubh Lochs SSSI, Balnagrantach SSSI, Knokie Lochs SSSI, Loch Ashie SSSI and Loch Vaa SSSI.

7.4.3 Four SPAs, Loch Ashie SPA, Moray Firth SPA, Loch Flemington SPA and Loch Vaa SPA, were also identified as having the potential to be connected to the Proposed Development Site.

7.4.4 Ornithology field surveys were carried out within the Proposed Development Site and surrounding area between January 2024 and January 2025. These surveys identified the following birds which have the potential to be impacted by the Proposed Development: Slavonian grebe, red-throated diver, golden eagle, black grouse, greenshank, dunlin, and golden plover.

7.4.5 **Appendix 7.2: Statement to Inform Habitats Regulations Appraisal (Volume 5)** describes the assessment conducted to test for adverse effects from the Proposed Development on the qualifying features of European sites which include impacts on SPAs and Ramsar Sites. It determined during appropriate assessment, taking account of the mitigation proposed, that the Pre-Construction and Enabling, Construction and Operation of the Proposed Development will not result in adverse effects on the integrity of any European site, either alone or in-combination with other projects or plans.

Residual Effects

Pre-Construction and Enabling

7.4.6 The chapter concludes that potential impacts on designated sites during Pre-Construction and Enabling Phase would be negligible and **Not Significant**.

7.4.7 Slavonian grebe (national significance), black grouse, greenshank, and dunlin (local significance) would experience **Not Significant** temporary adverse disturbance and displacement effects during these works. Mitigation measures such as works exclusion zones and blasting restrictions reduce some of these residual effects to negligible adverse.

7.4.8 Black grouse and greenshank would also experience **Not Significant** temporary adverse habitat loss during these works.

Construction

7.4.9 Potential impacts on designated sites during Construction would be negligible and **Not Significant**.

7.4.10 Slavonian grebe (national significance), red-throated diver, golden eagle (regional significance), black grouse, greenshank, dunlin, and golden plover (local significance) would experience **Not Significant** temporary adverse disturbance and displacement effects during Construction. Mitigation measures such as works exclusion zones and blasting restrictions reduce most of these residual effects to negligible adverse.

7.4.11 The impact of disturbance and displacement effects on golden eagle remains **Significant** adverse due to their regional importance.

7.4.12 Black grouse, greenshank, dunlin, and golden plover would also experience **Not Significant** permanent adverse habitat loss during Construction.

Operation

7.4.13 Potential impacts on designated sites during operation would be negligible and **Not Significant**.

7.4.14 Slavonian grebe (national significance) and red-throated diver (regional significance) would experience **Not Significant** temporary adverse disturbance and displacement effects during operation. Mitigation measures such as works exclusion zones around known breeding sites reduce these residual effects to negligible adverse.

Decommissioning

7.4.15 The assessment of decommissioning impacts has been scoped out of this assessment.

7.5 Aquatic and Marine Ecology

Overview

7.5.1 This chapter of the EIAR **(Chapter 9: Aquatic and Marine Ecology)** assesses the potential impacts on aquatic and marine ecology features including designated nature conservation sites such as SACs and Marine Protected Areas, protected special and habitats and an assessment of Invasive Non-Native Species (INNS) within 10 km or further afield when there is clear connectivity, for example through hydrological linkage.

7.5.2 The River Moriston SAC and the Moray Firth SAC are identified as having hydrological connectivity with the Proposed Development. The **Statement to Inform Habitat Regulations Assessment (Appendix 7.2, Volume 5)** sets out an assessment for adverse effects from the Proposed Development on the important features of European sites which include impacts on SACs. It concludes that the Proposed Development would not result in adverse effects on any European designated sites.

7.5.3 Various aquatic and marine surveys have been undertaken on relevant watercourses including Loch Ness and Loch nam Breac Dearga between March 2024 and Spring 2025. These surveys identified the following aquatic habitats which have the potential to be impacted by the Proposed Development: Loch Ness, Loch nam Breac Dearga, Allt an t-Sionnach and its tributaries, and Allt Saigh. The surveys also identified Atlantic salmon and Brown trout which are protected fish species.

Residual Effects

Pre-Construction and Enabling

7.5.4 The impact of the Pre-Construction and Enabling Phase has been considered in combination with the construction works for this assessment.

Construction

7.5.5 The Construction Phase carried out on the shoreline of Loch Ness would have a negligible to minor adverse effect on Loch Ness as an aquatic habitat and its fish population. However, there would, prior to the introduction of mitigation, be a major adverse effect on Atlantic salmon. These impacts would be mitigated using measures such as avoidance of salmon smolt (downstream) migration seasons (April to June inclusive) and installation of a silt curtain/ bubble screen to deter fish from the works area resulting in an overall **Not Significant** effect during construction of the Lower Control Works.

7.5.6 Construction of crossings for Temporary Access Tracks and Construction Compounds would have a **Not Significant** adverse effect on all impacted watercourses.

7.5.7 The construction of the Headpond and Headpond Embankments would have a negligible to minor adverse effect on aquatic species in Loch nam Breac Dearga, Allt an t-Sionnach and its tributaries, and Allt Saigh due to the loss of the natural loch and potential impacts downstream.

7.5.8 Pre-construction fish surveys would be carried out to inform the mitigation requirements for the loss of Loch nam Breac Dearga. It is envisaged that this will involve the translocation of fish to a suitable nearby receptor site – there are numerous similar lochans locally. Overall, there would be a **Not Significant** effect on aquatic ecology during construction of the Headpond.

7.5.9 The potential spread or introduction of invasive species into aquatic habitats would be mitigated through strict biosecurity measures. These measures are outlined in the oCEMP which includes an **outline Biosecurity Management Plan (Appendix 3.1: oCEMP, Volume 5)**. Overall, it is considered that there would be a **Not Significant** effect on the potential introduction of invasive species.

Operation

7.5.10 During operation, the Proposed Development would have an impact on the water levels of Loch Ness resulting in effects on aquatic habitats as well as fish passage (including Atlantic salmon and Brown trout). In addition, the operation of the Lower Control Works would result in an adverse effect on Loch Ness as a habitat and its fish population.

7.5.11 As detailed in **Chapter 11: Water Resources and Flood Risk** a new seasonally operated weir at the Dochfour Weir would manage water levels in Loch Ness and maintain flows in the River Ness downstream, resulting in negligible to minor adverse effects. In addition, to the upgrades to the weir, avoidance of salmon smolt (downstream) migration seasons (April to June inclusive) and installation of a silt curtain/ bubble screen to deter fish from the works area would result in **Not Significant** effects on Loch Ness and its fish population during Operation.

7.5.12 Impacts on watercourses and fish (including Atlantic salmon and Brown trout) within those watercourses, due to culverting, would be mitigated through the implementation of SuDS to control run-off. In addition, fishing surveys would be carried out prior to Construction to identify any additional mitigation required, reducing effects on culverted watercourses to **Not Significant**.

7.5.13 The potential spread invasive species into aquatic habitats would be mitigated through strict biosecurity measures. These measures are outlined in the outline CEMP which includes an **outline Biosecurity Management Plan (Appendix 3.1, Volume 5)**.

7.5.14 Impacts to Atlantic salmon within Loch Ness may reduce the availability of individuals within the Moray Firth SAC to serve as prey items for marine mammals such as bottlenose dolphin and harbour seal resulting in a minor adverse effect on the SAC. These impacts would be mitigated through the provision of a fish pass or fish passes which would be designed and installed on Dochfour Weir to facilitate and improve the upstream and downstream passage of migratory fish compared to existing situation. Overall, there would be a **Significant** beneficial effect on the SAC during Operation.

Decommissioning

7.5.15 The assessment of decommissioning impacts has been scoped out of this assessment.

7.6 Water Environment

Overview

7.6.1 This chapter of the EIAR **(Chapter 10: Water Environment)** assesses the potential effects of the Proposed Development on the water environment, including Loch Ness, Loch nam Breac Dearga and other lochs/lochans, watercourses, groundwater bodies (i.e. aquifers) and private water supplies.

Residual Effects

Pre-Construction and Enabling

7.6.2 The groundwater quality of the Lower Old Red Sandstone aquifer, the Glenfinnan Group Aquifer, superficial aquifers and one private water supply have the potential to experience a **Not Significant** effect due to contaminated run-off from works associated with the Pre-Construction and Enabling phase.

7.6.3 Changes to groundwater flow and level from the works would have a **Not Significant** adverse effect on the groundwater quantity of superficial aquifers, the Glenfinnan Group Aquifer, the Lower Old Red Sandstone Aquifer and one private water supply.

7.6.4 The River Enrick, the River Coiltie, two unnamed streams and two private water supplies have the potential to be impacted by surface water run-off from Pre-Construction and Enabling Phase. This run-off could carry fine sediments and chemicals, leading to a **Not Significant** adverse effect.

7.6.5 The hydromorphology (i.e. the shape) of several watercourses, including Allt Luirg nam Broc, Drumclune Burn, Caochan an Loch Dhuibh, Allt Creag an Fhithich, Cauchan na Ruighe Duibe, Allt na Criche, and several unnamed streams, would experience minor adverse effects due to the loss of channel lengths and an impact on coarse sediment movement resulting from the construction of temporary and permanent crossings. Additionally, the Allt Glas Beag, the River Enrick, and an unnamed stream would experience negligible effects on hydromorphology.

7.6.6 There would be a negligible effect on sediment deposition in the River Coiltie, Allt Glas Beag, and two unnamed streams due to potential sediment run-off from new hardstanding areas.

7.6.7 These potential impacts would be managed and mitigated through a Water Quality and Flow Monitoring Plan and a Water Management Plan (WMP). The **outline WMP (Appendix 10.4, Volume 5)** sets out measures to avoid, reduce, and minimise adverse impacts on the water environment during Pre-Construction and Enabling. It also details the proposed water quality, flow, and level monitoring for the Pre-Construction and Enabling phase.

Construction

7.6.8 The groundwater quality of the Lower Old Red Sandstone Aquifer would face a moderate adverse effect due to contaminated run-off from the construction of the borrow pit, Lower Control Works, Power Cavern (Option A), and tunnels. However, this impact would be mitigated through water quality monitoring and an emergency response plan within the **outline WMP (Appendix 10.4, Volume 5)**, resulting in an overall **Not Significant** adverse effect.

7.6.9 The Glenfinnan Group Aquifer, superficial aquifers and several private water supplies would have the potential to experience **Not Significant** adverse effects on groundwater quality from contaminated run-off during construction.

7.6.10 Changes to groundwater flow and levels caused by the Construction Phase could have a **Not Significant** adverse effect on the Lower Old Red Sandstone Aquifer, the Glenfinnan Group aquifer, superficial aquifers, and several private water supplies.

7.6.11 Loch Ness would be at risk of pollution from construction works; however, embedded mitigation measures would ensure this effect remains minor adverse and **Not Significant**.

7.6.12 The following watercourses would be affected by any uncaptured surface water run-off from construction works, leading to a **Not Significan**t adverse effect:

- Allt Saigh;
- Drumclune Burn;
- the River Enrick;
- River Coiltie;
- Grotaig Burn;
- Divach Burn;

- Allt Coire an Ruighe;
- Allt Glas Beag;
- Allt Glas Mor;
- Loch nan Oighreagan;
- Caochan an Loch Dhuibh;
- Allt Creag an Fhithich;
- Cauchan na Ruighe Duibe;
- Allt na Criche;
- Allt Luirg nam Broc;
- Drumclune Burn; and
- several unnamed streams

7.6.13 The hydromorphology of the following water courses would experience **Not Significant** adverse effects due to the loss of to the loss of channel lengths and impacts on coarse sediment movement:

- Caochan an Loch Dhuibh;
- Allt Creag an Fhithich;
- Cauchan na Ruighe Duibe;
- Allt na Criche;
- Allt Loch an t-Sionnaich;
- Allt Coire an Ruighe;
- Allt Glas Beag;
- Allt Glas Mor;
- Allt Luirg nam Broc;
- Drumclune Burn; and
- several unnamed streams.

7.6.14 A small stream flowing into Loch Ness southeast of the Headpond would experience a **Not Significant** adverse effect due to its channel being cut off from Loch Ness by the construction of the Lower Control Works.

7.6.15 An **outline WMP (Appendix 10.4, Volume 5)** outlines measures to avoid, reduce, and minimise adverse impacts on the water environment during the Construction phase. It also details the proposed water quality, flow, and level monitoring for the Construction phase.

Operation

7.6.16 During operation, the groundwater quality of the Lower Old Red Sandstone aquifer, Glenfinnan Aquifer, superficial aquifer and all private water supplies within the Allt Saigh, Primrose Bay, Grotaig Burn, and Divach Burn areas would be impacted by the ongoing presence of the Waterways, Power Cavern Complex, and Access Tunnels, resulting in a **No Significant** adverse effect.

7.6.17 Changes to the groundwater level from changes in the Loch Ness water level would have a **Not Significant** adverse effect on the Lower Old Red Sandstone Aquifer and one private water supply.

7.6.18 Loch Ness would experience moderate adverse effects on surface water stratification and minor adverse effects on surface water quality during the operation of the Proposed Development. These impacts would be mitigated through the provision of a seasonally adjustable weir at Dochfour Weir to manage the water levels in Loch Ness. Without the proposed weir in place, the Proposed Development would only operate within the natural water level variation of Loch Ness. Adaptive operation of the Proposed Development, which responds to water level variations and modelling, would be utilised to avoid adverse impacts on water levels and water quality, resulting in an overall **Not Significant** effect.

7.6.19 All scoped watercourses would experience a **Not Significant** adverse effect on surface water quality during the operation of the Proposed Development.

7.6.20 The hydromorphology of Allt Loch an t-Sionnaich and two of its tributaries would experience moderate, **Significan**t, adverse effects due to the loss of channel sections to create the Headpond, and Loch nam Breac Dearga would experience a moderate, **Significan**t, adverse effect due its permanent alteration to become the Headpond.

7.6.21 There would also be **Not Significant** adverse effects on the hydromorphology of the same watercourses due to changes in flow or sediment transport and on Loch Ness due to changes from the operation of the Lower Control Works.

Decommissioning

7.6.22 The assessment of decommissioning impacts has been scoped out of this assessment.

7.7 Flood Risk and Water Resources

Overview

7.7.1 This chapter of the EIAR **(Chapter 11: Flood Risk and Water Resources)** assesses the potential impacts of the Proposed Development on flood risk and water resources including Loch Ness, the River Ness and the Caledonian Canal water levels and fish passage over the Dochfour Weir.

7.7.2 The Flood Risk Assessment (FRA) **(Appendix 11.2, Volume 5)** was undertaken to assess the impact of the Proposed Development on flood risk.

Residual Effects

Pre-Construction and Enabling

7.7.3 The impact of the Pre-Construction and Enabling phase has been considered in combination with the Construction phase for this assessment.

Construction

7.7.4 An increased area of hard standing or compacted surfaces, temporary water storage and increased flows due to dewatering activities could result in more rapid surface water run-off to local watercourses. This would result in a moderate adverse effect on off-site properties and infrastructure due to their sensitivity and a negligible to minor effect on on-site receptors. Following the implementation of the measures identified in the **oCEMP (Appendix 3.1, Volume 5)** and the appropriate design of surface water drainage as identified in the Drainage Strategy these effects would be **Not Significant**.

Operation

7.7.5 The Proposed Development would discharge water into Loch Ness during normal operation. It must be managed to avoid increasing flood risk downstream in Loch Ness or in the River Ness. Without mitigation, this would result in a significant adverse effect on flood risk. However, operational parameters and a new seasonally operated weir at the Dochfour Weir would manage these impacts, resulting in **Not Significant** effects on water levels and flows in Loch Ness and the River Ness.

7.7.6 The Proposed Development will include the creation of a Headpond, which will impound a substantial amount volume of water during operation. Due to the high standard of design, management and maintenance required under the Reservoir (Scotland) Act 2011, the probability of occurrence of an unplanned flow release is considered extremely remote. Occasional flow release would be controlled through a restriction at a secondary bund and its operation restricted to a few minutes therefore the risk of any flooding resulting from the Headpond during operation is **Not Significant** adverse.

Decommissioning

7.7.7 The assessment of decommissioning impacts has been scoped out of this assessment.

7.8 Cultural Heritage

Overview

7.8.1 This chapter of the EIAR **(Chapter 12: Cultural Heritage)** assesses the potential impacts on above and below-ground archaeological resources, built heritage, the historic landscape, and any other elements that contribute to the historical and cultural heritage of the area, which could be affected by the Proposed Development.

7.8.2 There are two designated heritage assets located within the Proposed Development Site: Dun Scriben Fort, which is a Scheduled Monument, and Alltsigh House, which is a Category B Listed Building. Within the wider area there are a number of Listed Buildings and Scheduled Monuments linked to settlements along Glen Uquhart and at Foyers and Drumnadrochit.

7.8.3 The impacts of water level changes have also been considered on Glen Urquhart Castle and the Cherry Island Crannog due to their proximity to Loch Ness.

7.8.4 A cultural heritage site visit was undertaken in November 2024 to identify non-designated heritage assets within the Proposed Development Site and evaluate the setting of designated heritage assets outside the Proposed Development Site.

Residual Effects

Pre-Construction and Enabling

7.8.5 There are no previously recorded heritage assets within the area of the Pre-Construction and Enabling Phase works, and there is limited potential for previously unrecorded assets to be identified. Direct physical impact on these assets would result in a **Not Significant** effect.

Construction

7.8.6 The Proposed Development has the potential to physically impact previously unrecorded assets during Construction where preservation *in situ* is not possible mitigation would include excavation and recording. There is also the potential for accidental damage to the remains of the former Ruskich Inn, which is a non-designated historic asset. These impacts would result in **Not Significant** adverse effects during Construction.

Operation

7.8.7 During operation, there would be a **Not Significant** adverse effect on the Cherry Island Crannog due to water level changes in Loch Ness.

Decommissioning

7.8.8 The assessment of decommissioning impacts has been scoped out of this assessment.

7.9 Access, Traffic and Transport

Overview

7.9.1 This chapter of the EIAR **(Chapter 13: Access, Traffic and Transport)** assesses the potential impacts of the Proposed Development on traffic and movement.

7.9.2 The following factors are considered as part of the assessment of the impacts on the road network: severance of communities, fear and intimidation of and by road users, road user and pedestrian safety, non-motorised user amenity, non-motorised user delay, road vehicle driver and passenger delay and the effect of hazardous/large loads.

7.9.3 Impacted sections of the following public roads have been included in the assessment: the A82, the A831, the A833 and the A887.

Residual Effects

Pre-Construction and Enabling

7.9.4 During the Pre-Construction and Enabling Phase, the forecast daily construction traffic would be 12 heavy goods vehicle (HGV) trips (6 arrivals and 6 departures) and 12 car/ light goods vehicle (LGV) trips (6 arrivals and 6 departures). This would result in a **Not Significant** adverse effect on the identified public road network due to a small temporary increase in traffic using the network.

7.9.5 The sensitivity of the A831 at Milton, which is affected by tourist traffic and people at home and work using the road, has been considered.

Construction

7.9.6 During the works, the forecast daily construction traffic would be 178 HGV trips and 34 car/ LGV trips. This would result in a **Not Significant** adverse effect on the identified public road network due to a small temporary increase in traffic using the network.

Operation

7.9.7 The assessment of operational impacts has been scoped out of this assessment as the number of permanent jobs is likely to generate a very limited number of vehicle movements during a typical operational day, once factors such as car sharing or shift working are taken into consideration.

Decommissioning

7.9.8 The assessment of decommissioning impacts has been scoped out of this assessment.

7.10 Noise and Vibration

Overview

7.10.1 This chapter of the EIAR **(Chapter 14: Noise and Vibration)** assesses the potential impacts of noise and vibration on sensitive receptors which have the potential to be impacted by the Proposed Development.

7.10.2 The identified key noise sensitive receptors which have been assessed are as follows: Balmacaan Estate, Annie's Lodge (Grotaig), Loch Ness Shore (Foyers), Primrose Bay (near A82), Balnain, Achindaul (Drumnadrochit), Foyers Lodge (Foyers), Ancarraig House (Bunloit), Divach (Drumnadrochit) and Alltsigh.

Residual Effects

Pre-Construction and Enabling

7.10.3 There would be a **Not Significant** adverse effect on the majority noise sensitive receptors (nearby residential properties or tourist accommodation) during the Pre-Construction and Enabling phase resulting due to noise and vibration from construction machinery, construction blasting and construction vehicles. Piling noise levels are expected to be very low while a specialist blasting contractor will be procured to ensure that noise from blasting is minimised as far as possible.

7.10.4 There would a medium impact on receptors at Balnain resulting from the nearby construction of the access road and footpaths off the A831. However, this would be mitigated through the provision of an acoustic barrier resulting in an overall **Not Significant** adverse effect.

Construction

7.10.5 There would be a **Not Significant** adverse effect on all noise sensitive receptors (nearby residential properties or tourist accommodation) during the Construction phase resulting due to noise and vibration from construction machinery, construction blasting and construction vehicles. Piling noise levels are expected to be very low while a specialist blasting contractor will be procured to ensure that noise from blasting is minimised as far as possible.

Operation

7.10.6 There would be a **Not Significant** noise impact on all noise sensitive receptors during operation of the Proposed Development. Airborne noise levels are predicted to be well below the background sound levels at the nearest noise sensitive receptors.

Decommissioning

7.10.7 The assessment of decommissioning impacts has been scoped out of this assessment.

7.11 Geology and Ground Conditions

Overview

7.11.1 This chapter of the EIAR **(Chapter 15: Geology and Ground Conditions)** assesses the potential impacts on geology and ground conditions which have the potential to be impacted by the Proposed Development.

7.11.2 The Proposed Development will consist of both above and below ground infrastructure, and as such the impact on geology and soils has been an important consideration of the design and embedded mitigation. The Proposed Development has therefore been designed and sited to avoid important geological, and soil features as far as possible. The Proposed Development utilises as much of the material excavated for the below ground infrastructure in the construction of the above ground infrastructure, such as the Embankments for the Headpond. In order to do this, the chapter includes an assessment of the reuse of excavated material on site through a **Material Management Appraisal (Appendix 15.1, Volume 5)**.

7.11.3 The potential effects on geological and soil receptors are extremely limited and have therefore been scoped out of the assessment with the exception of impacts on peat. Pockets of peat are recorded relatively frequently,

scattered throughout the Proposed Development Site. Where avoidance of peat was not possible, alternative construction methodologies have been prescribed (floating access tracks etc.).

Residual Effects

Pre-Construction and Enabling

7.11.4 During the Pre-Construction and Enabling Phase, peat will to be excavated, stored, re-used and disposed of. Peat is a highly sensitivity receptor, however, the **outline Peat Management Plan (Appendix 15.1, Volume 5)** sets out mitigation measures to minimise the impact on peat as far as possible resulting in a **Not Significant** effect on the shallow peat deposits.

Construction

7.11.5 The Construction phase of the Proposed Development will require excavation, storage, re-use and waste disposal of peat deposits. This permanent loss of peat would result in a **Not Significant** adverse effect on peat deposits within the Proposed Development Site.

Operation

7.11.6 Peat excavated during the Construction phase will be permanently displaced from the areas required for above ground infrastructure. Therefore, as the impact has occurred already in the Construction phase, there are **No Effects** on peat during operation.

Decommissioning

7.11.7 The assessment of decommissioning impacts has been scoped out of this assessment.

7.12 Socioeconomics, Tourism and Recreation

Overview

7.12.1 This chapter of the EIAR **(Chapter 16: Socioeconomics, Tourism and Recreation)** assesses the potential socio-economic, recreation and tourism impacts resulting from the Proposed Development.

7.12.2 A separate Socio-Economic Statement has been submitted as part of this Section 36 Application to demonstrate how the Proposed Development will maximise the net economic impact, including local and community socio-economic benefits, of the Proposed Development.

Residual Effects

Pre-Construction and Enabling

7.12.3 During the Pre-Construction and Enabling Phase, the Proposed Development would have a **Not Significant beneficial** effect due to local job creation and a **Significant beneficial** effect on The Highland Council area economy due to the value of these jobs (i.e. gross value added).

7.12.4 The Proposed Development would result in **Not Significant** adverse effects on the local community during this phase due to construction workers moving into the area and increased construction activities impacting the availability of housing and services as well as the daily operations of the community. There would also be a **Not Significant** adverse effect on visitor accommodation and visitor attractions, including the enjoyment of visitors/guests.

7.12.5 The provision of a Community Liaison Group to provide information on the Proposed Development and construction activities, and the opportunity to raise issues would provide some additional mitigation.

7.12.6 Pre-construction activities and construction traffic would have a moderate adverse effect on the local community's ability to access services and areas. However, this would be mitigated through the measures set out in the Framework CTMP **(Appendix 13.2: Framework CTMP, Volume 5)**, including site-specific measures such as signage and local upgrades to crossing points, resulting in a **Not Significant** adverse effect.

7.12.7 There would also be adverse effects on the Affric Kintail Way, on the Meall Fuar-Mhonaidh summit route and several core paths within the Proposed Development Site due to direct physical impacts on these routes. However, the provision of an Access Management Plan **(Appendix 16.1: Outline Access Management Plan,**

Volume 5) setting out the measures to maintain access on the recreational routes would result in **Not Significant** adverse effects.

7.12.8 There would be **Not Significant** adverse effects on all other routes due to nearby construction traffic, which would impact the enjoyment that locals and visitors experience walking on the routes.

Construction

7.12.9 During Construction, the Proposed Development would have **Significant beneficial** effects on the economy within The Highland Council area due to local job creation and the value of these jobs to the local economy (i.e. gross value added).

7.12.10 The Proposed Development would have **Not Significant** adverse effects on the local community during Construction due to construction workers moving into the area and increased construction activities impacting the availability of housing and services as well as the daily operations of the community. There would also be an adverse effect on visitor attractions, visitor accommodation and the enjoyment of Loch Ness as a tourism asset. The provision of a Community Liaison Group to provide information on the Proposed Development and construction activities, and the opportunity to raise issues would provide mitigation, reducing the effects to **Not Significant** adverse.

7.12.11 Pre-construction activities and construction traffic would have a moderate adverse effect on the local community's ability to access services and areas. However, this would be mitigated through the measures set out in the CTMP **(Appendix 13.2: Framework CTMP, Volume 5)**, including site specific measures, such as signage and local upgrades to crossing points resulting in an overall minor adverse effect.

7.12.12 There would also be an adverse effect on users' enjoyment of the Affric Kintail Way and the Meall Fuar-Mhonaidh summit route due to the construction activities. However, the provision of an Access Management Plan **(Appendix 16.1: Outline Access Management Plan, Volume 5)** setting out the measures to maintain access on the recreational routes would result in **Not Significant** adverse effects.

7.12.13 There would be **Not Significant** adverse effects on all other routes due to nearby construction traffic, which would impact the enjoyment that locals and visitors experience walking on the routes.

7.12.14 In terms of other recreational receptors, the Proposed Development would also have a **Not Significant** adverse effect on recreational fishing at Loch nam Breac Dearga.

Operation

7.12.15 During operation, the Proposed Development would have a **Significant beneficial** effect on job creation within The Highland Council area and a **Not Significant** beneficial effect on the local economy from the value of these jobs to the local economy (i.e. gross value added).

7.12.16 Operational activities would have a **Not Significant** effect on the local community's ability to access services and areas.

7.12.17 There would also be a **Not Significant** adverse effect on recreational routes and the enjoyment of route users of Affric Kintail Way, core paths within the Proposed Development Site and the Meall Fuar–Mhonaidh summit route during operation.

7.12.18 The Proposed Development would have a **Not Significant** effect on the local community during operation due to an increase in local workers and increased operational activities impacting the availability of housing and services as well as the daily operations of the community. There would also be **Not Significant** effects on visitor accommodation and attractions and on the enjoyment of Loch Ness as a tourism asset.

7.12.19 Information on significant maintenance activities to the Lower Control Works would be shared with The Highland Council and Scottish Canals to minimise any impacts on recreational users of Loch Ness during operation.

Decommissioning

7.12.20 The assessment of decommissioning impacts has been scoped out of this assessment.

7.13 Climate

Overview

7.13.1 This chapter of the EIAR **(Chapter 17: Climate)** assesses the impact of the Proposed Development on the climate, as well as the impacts and effects of climate change on the Proposed Development.

7.13.2 As set out in **Section 1.7**, the purpose of the Proposed Development is to support renewable energy sources in the production of energy making the grid more reliable and less reliant on non-renewable energy sources. This chapter provides an assessment of this impact on the climate.

Residual Effects

Pre-Construction and Enabling

7.13.3 The impact of the Pre-construction and Enabling Phase has been considered in combination with the Construction Phase for this assessment.

Construction

7.13.4 During the Pre-Construction and Enabling and Construction of the Proposed Development, there will be unavoidable greenhouse gas emissions due to the use of materials, energy, fuel, and transportation. Combined emissions from the Pre-Construction and Enabling and Construction phases of the Proposed Development are estimated to be approximately 1 million tCO_2e which is less than 0.22% of the Scottish Carbon Budget for the years 2021 to 2030 and less than 0.27% of the Scottish Carbon Budget for the years 2031 to 2045. These emissions therefore align with measures necessary to achieve the UK's trajectory towards Net Zero resulting in a **Not Significant** adverse effect on greenhouse gas emissions.

7.13.5 The risks assessed in the Climate Change Risk Assessment (CCRA) during Pre-Construction and Enabling and Construction predominantly covers workforce exposure to dangerous working conditions and damage to physical structures/asset damage. Major climatic variables contributing to these risks include, but are not limited to, increased temperatures, flooding, and storms. As a result of the embedded climate change mitigation measures, it is concluded that all climate change risks during these phases would be **Not Significant** adverse.

7.13.6 It should be noted that the In-combination Climate Change Impact Assessment (ICCIA) considers the combined impact of future climate conditions and the Proposed Development on environmental receptors i.e. not just the impact of the Proposed Development itself. The impact of climate change during the Proposed Development's re-construction and construction will be unavoidable. The mitigation measures detailed within each of the assessment chapters would help to reduce this impact. Overall, there would be a **Not Significant** adverse in-combination effect.

Operation

7.13.7 During operation of the Proposed Development, there will be unavoidable greenhouse gas emissions due to operational maintenance activities. However, the Proposed Development is expected to achieve emissions reductions in comparison to the alternative future baseline scenario, in line with Scotland's commitment of Net Zero by 2045. The estimated operational greenhouse gas emissions from the Proposed Development indicate a potential saving of up to 148 million tonnes of Carbon Dioxide Equivalent (tCO_2e) across the anticipated 125-year operational period. This would result in a **Significant beneficial** effect.

7.13.8 The risks assessed in the CCRA at the Operational phase of the Proposed Development predominantly encapsulate asset damage from extreme weather conditions and changes in annual precipitation and temperatures, as well as workforce exposure to dangerous working conditions. The most significant risks during operation are flooding and storm events rated high **Significant** adverse for the future scenarios.

7.13.9 The cumulative impact of climate change during the Proposed Development's operation will be unavoidable. The mitigation measures detailed within each of the assessment chapters would help to reduce this impact. Overall, there would be a **Not Significant** adverse in-combination effect.

Decommissioning

7.13.10 The assessment of decommissioning impacts has been scoped out of this assessment.

7.14 Forestry

Overview

7.14.1 This chapter of the EIAR **(Chapter 18: Forestry)** assesses the potential impacts on forest and woodland areas which have the potential to be impacted by the Proposed Development.

Residual Effects

Pre-Construction and Enabling

7.14.2 The impact of the Pre-Construction and Enabling Phase have been considered in combination with the Construction Phase for this assessment.

Construction

7.14.3 The Pre-Construction and Enabling and Construction of the Proposed Development would result in the loss of 8.32 hectares of commercial woodland. Due to its low sensitivity and the regional scale of the forest within the area (91,225 hectares) the overall effect would be **Not Significant** adverse.

7.14.4 The tree felling required through areas of mature commercial woodland to create the Proposed Development may result in an indirect effect of increasing potentially unstable forest edges where retained trees stand immediately adjacent to the Proposed Development. Since these trees have not yet undergone thinning, the collective stability of the stand remains high. Consequently, the identified area of commercial woodland is assessed to remain at low risk and an overall **Not Significant** adverse effect.

7.14.5 The Pre-Construction and Enabling and Construction of the Proposed Development would also result in the loss of 2.57 hectares of semi-natural woodland (mixed native broad-leaved woodland), including 0.78 hectares of Ancient Woodland. Due to its high sensitivity and value at a local scale the overall effect would be major adverse.

7.14.6 The Scottish Government's Control of Woodland Removal Policy provides policy direction for decisions on woodland removal in Scotland. The policy requires that an equivalent area of woodland be provided within the Proposed Development Site to ensure that the objective of no net loss of woodland is met. As detailed in **Appendix 7.5 Biodiversity Net Gain (Volume 5: Appendices)**, an additional 677 hectares of woodland will be provided (a net gain of 667 hectares), which will not only compensate for the woodland loss but also contribute to the enhancement of biodiversity, carbon sequestration, and overall environmental value.

7.14.7 With the introduction of mitigation measures including reducing felling where possible and providing mitigation planting elsewhere onsite the residual effect would be **Significant** adverse.

Operation

7.14.8 The direct operational effects on forests and woodland associated with the Proposed Development would be limited to periodic vegetation management as part of the wider maintenance of the Proposed Development resulting in a **Not Significant** effect.

7.14.9 The introduction of the Proposed Development within areas of managed forest would require a review by landowners of the existing management system. It is considered that this effect would be moderate adverse; however, following the introduction of proposed mitigation in the Woodland Report **(Appendix 18.1 and 18.2 Woodland Report (Volume 5)**, the residual effect on forest management is assessed as **Not Significant** adverse.

Decommissioning

7.14.10 The assessment of decommissioning impacts has been scoped out of this assessment.

8 Cumulative Effects

8.1 Overview

8.1.1 An assessment of cumulative effects has been provided in each of the assessment chapters. Two types of cumulative effects have been considered:

- **Inter-cumulative Effects:** These effects happen when multiple projects (past, present, or future) combine to impact the same receptor. Individually, they might not be significant, but together they could have a noticeable effect.
- **Intra-cumulative Effects:** These occur when a single receptor is affected by multiple sources from the Proposed Development. This is also known as “in-combination effects” For example, a local resident might experience dust, noise, and traffic disruption all at once, which is more bothersome than each issue alone.

8.1.2 The following developments have been considered as part of the cumulative assessment:

- Loch Na Cathrach PSH
- Loch Kemp PSH
- Glen Affric Hydro-electric
- Foyers PSH
- Glenmoriston Hydroelectric power station
- Livishie Hydroelectric Power station
- Glendoe Hydroelectric Power Station
- Shenval Hydro
- Coiltie Hydro
- Alt Luaidhe Hydro-scheme
- Gartally Micro-hydro
- Loch Liath Wind farm
- Bhlaraidh Wind Farm
- Bhlaraidh Wind Farm Extension
- Chrathaich Wind Farm
- Fiodhag Wind Farm
- Corrimony Wind Farm
- Stonelairg Wind Farm
- Cloiche Wind Farm
- Corriegarth Wind Farm
- Corriegarth 2 Wind Farm
- Drunmglass Wind Farm
- Aberarder Wind Farm
- New 33kV Overhead Line Spur for connection to New Communications Mast at Bunloit, Drumnadrochit
- New residual development, Drumnadrochit
- Erection of a 70m High Meteorological mast
- Corriegarth 2 Windfarm Grid Connection
- Auchterawe Substation Extension
- Bhlaraidh Extension Wind Farm Grid Connection Works
- Bingally 400 kV Substation
- Bingally 400 kV Substation Overhead Line tie-in
- Foyers Power Station extension
- Dell 2 Wind Farm
- Millennium East Wind Farm
- Cnoc Farasd Wind Farm

8.1.3 In addition, the landscape assessment has considered the cumulative impact of the Proposed Development with its future required grid connection.

8.2 Inter-cumulative Effects

8.2.1 **Table 8-1 Significant Inter-cumulative Effects** sets out significant adverse inter-cumulative effects which have been caused by the impact of the Proposed Development in combination with other developments.

Table 8-1 Significant Inter-cumulative Effects

Chapter	Relevant Cumulative Developments	Receptor	Impact	Residual Effects
6. Landscape and Visual	All cumulative developments[4] and the Glen Earrach PSH grid connection	The summit of Meall Fuar-mhonaidh (Viewpoint 1)	Visual impact on views to the west; however, views to the east over Loch Ness remain unaffected.	Moderate Adverse.
10. Water Environment	Loch na Cathrach PSH, Loch Kemp PSH and Foyers PSH	Loch Ness	Impact on water levels of Loch Ness during operation.	Modelling is proposed to investigate the potential cumulative effects during detailed design.
13. Access, Traffic and Transport	All cumulative developments	A82 Lewiston	Increase in road vehicle driver and passenger delay.	Moderate Adverse.

8.3 Intra-cumulative Effects

8.3.1 Due to the application of embedded mitigation and additional mitigation measures (such as the avoidance of habitats, design of the Proposed Development, the CEMP and topic specific management plans), no significant intra-cumulative effects have been identified.

[4] With the exception of the following cumulative developments unlikely to result in significant adverse effects: Glenn Affric Hydro-electric; Livishie Hydroelectric Power station; Stronelairg Wind Farm; Dunmglass Wind Farm; Aberarder Wind Farm; New Residential Development, Drumnadrochit; Auchterawe Substation extension; and Land 30M NE Of 5 Carrier's Croft Lewiston Drumnadrochit.

9 Overall Conclusions

9.1.1 This Non-technical Summary outlines the findings of the EIAR for the Proposed Development. The Pre-Construction and Enabling, Construction, and Operation of the Proposed Development have the potential to have effects on the natural environment and nearby human receptors.

9.1.2 The EIAR concludes that the Proposed Development is likely to have mainly minor adverse to negligible effects on the environment. Significant adverse effects are limited to the following:

- There would be **Significant adverse** effect, during Pre-Construction and Enabling Works, Construction and Operation, on the following landscape receptors.
  - Pre-Construcion and Enabling
    - VP12
  - Construction
    - Loch Ness and Duntelchaig SLA
    - LCT 222 - Rocky Moorland Plateau – Inverness
    - LCT 225 – Broad Steep-Sided Glen
    - VP1
    - VP2
    - VP3
    - VP5
    - VP9
    - VP12
    - VP13
  - Operation – Year 1
    - LCT 222 - Rocky Moorland Plateau – Inverness
    - VP1
    - VP2
    - VP3
    - VP12
  - Operation – Year 15
    - VP1
- There would be a **Significant adverse** effect, during Construction, on golden eagle due to disturbance and displacement effects.
- There would be a **Significant adverse** effect, during Operation, on the hydromorphology of Allt Loch an t-Sionnaich and two of its tributaries due to the loss of channel sections for the creation of the Headpond.
- There would be a **Significant adverse** effect, during Operation, on the hydromorphology of Loch nam Breac Dearga due to its permanent alteration to become the Headpond.
- There would be a **Significant adverse** effect, during Operation, on assets and workforce resulting from flooding and storm events due to global climate change effects.
- There would be a **Significant adverse** effect, during Pre-Construction and Enabling and Construction, on semi-natural woodland (mixed native broad-leaved woodland), including Ancient Woodland due to the permanent loss of 2.18 hectares of designated woodland.
-

9.1.3 The Proposed Development would also result in the following significant beneficial effects:

- There would be a **Significant beneficial** effect, during Operation, on greenhouse gas emissions due to the potential saving of up to 148 million tCO_2e across the anticipated 125-year Operational Phase.
- There would be a **Significant beneficial** effect, during Pre-Construction and Enabling, on Gross Value Added generation within The Highland Council Area.
- There would be a **Significant beneficial** effect, during Construction, on Gross Value Added generation within The Highland Council Area.
- There would be a **Significant beneficial** effect, during Construction, on temporal job creation within the Highlands Council Area.
- There would be a **Significant beneficial** effect, during Operation, on full time job creation within The Highland Council Area.
- There would be a **Significant beneficial** effect, during Operation, on operational workers supporting services and the vitality of the area.
- There would be a **Significant beneficial** effect, during Operation, on Atlantic salmon as a result of impacts to water levels in Loch Ness.
- There would be a **Significant beneficial** effect, during Operation, on brown/sea trout, European eel, and lamprey species as a result of impacts to water levels in Loch Ness.
- There would be a **Significant beneficial** effect, during Operation, on Atlantic salmon smolts in Loch Ness due to the operation of the LCW and associated screen on Loch Ness.
- There would be a **Significant beneficial** effect, during Operation, on the Moray Firth SAC due to increasing the number of smolts reaching the designated site which creates a benefit for bottlenose dolphin and harbour seal.

9.1.4 The results of the EIA ensure that decision makers, statutory consultees, and other interested parties, including the local community, are aware of a proposed development's potential environmental impacts and their significance. This information informs decision makers and other interested parties, enabling them to participate in the statutory consenting process with full knowledge of the development's impacts.

10 Next Steps

10.1.1 The results of the EIA will be considered as part of the decision to grant or refuse planning permission for the Proposed Development. One of the key aims of the EIA is to ensure that the environmental effects of the Proposed Development are known and understood so that these may be considered before deciding whether or not to proceed with the development.

10.1.2 In considering the application, the ECU will consult with a range of organisations such as The Highland Council, SEPA, NatureScot and Historic Environment Scotland as well as invite comments from the local community. Further details of how to make a representation can be found in **Section 1.5** of this Non-technical Summary. The responses to the Section 36 Application from all parties, including comments made in relation to results of the EIA, will be considered in determining the application for consent.

Glen Earrach AECOM